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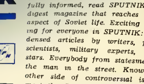

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Letters to the Editor

I am a last-year student in the pedagogical faculty at Leipzig University. When I graduate I shall teach history and Russian language in a school. Consequently I read publications in the original Russian, including SPUTNIK, which helps me in my studies and my practical work.

The material published last December about the coats-of-arms and flags of the union republics, I thought, was very good. It was a kind of supplement to the articles on union republics which appear from time to time in the magazine. But it is a pity that these articles are not accompanied by maps of the republics with which they are concerned.

What most impressed me out of what you published in 1970 was the article about Yesenin (October 1970) and TEACH-OUT, about the work of that wonderful Ukrainian teacher, Vassili Sukhomlinsky (September 1970).

Helda Kieter, Leipzig, German Democratic Republic

I am a regular reader of SPUTNIK. Particularly interesting, to my mind, is the material you carry on the union republics. I very much liked the article on the Kirghiz Republic and the illustrations to it in December 1970. Could you not explain in greater detail what a union republic is, how the sovereignty and equality of a union republic are guaranteed,

Continued on p. 146

Your Health Is in Your Own Hands

by Nikolai AMOSOV,
member of the Ukrainian
Academy of Sciences

from the weekly NEDELYA

Let's take a new look at the traditional approach to some of the problems embraced by the apparently well-known concepts of HEALTH, ILLNESS and MEDICINE, a Soviet scientist proposes.

We often reproach the doctors when it is already too late for them to do anything for us. It does not usually occur to us to wonder whether we ourselves are to blame for our illness. But anyway, what is the good of looking for the culprit when the harm has been done? Far better to do something to prevent it in good time, surely.

Just as the best way to prolong life is not to shorten it, so the best cure for all illnesses is prevention. But this should not be a passive matter (on the principle that "God cares for the careful", expressed in the over-caution of the man who likes to make trebly sure of everything), but an active one. There must be constant mobilisation of the body's defence forces, which must be energetically strengthened at the right time.

This, roughly, is the basis of the views held by Professor Nikolai Amosov, Lenin Prize Winner and head of the Ukrainian Academy of Sciences Clinic of Tuberculosis and Chest Surgery, and a specialist in lung and cardio-vascular diseases.

* * *

It is a gloomy look-out for health all over the world — in both poor and rich countries. True, the reasons differ. In some countries lack of the vital necessities is the culprit, in others the reason is a surfeit.

Someone may object — but after all, average expectation of life has increased, and this is just about the clearest index of a population's health, isn't it? In our country, for example, life expectancy has almost doubled, to reach 70 years. In czarist Russia (at the beginning of this century), it was less than 35 years — as it is today among certain African peoples (the Bantus of Rhodesia and the South African Republic, among others). This was the level in India until recently, when India was a British colony. After the proclamation of independence, when India began to make sweeping progressive social and economic changes, expectation of life began to grow rapidly, and is now nearing 45. In some developed countries it is now over 70! Isn't this a sign of the successes of the health services?

But don't let's delude ourselves. A long life does not necessarily mean prolonged health. For many people it is a constant chain of suffering. The hospitals and doctors' surgeries are overflowing with patients. The number of sick people is on the increase, and will soon be growing faster than the population itself. World statistics show that death has gone over to the offensive, too. In the past few years mortality among the over-thirtyfives has begun to climb very gradually. Average life expectancy, it is true, is still growing, but it is growing slowly, and now only on account of reduction in child mortality.

It is as though medicine has shot its bolt and gone over from attack to defence. Fresh efforts

must be made. In new directions, it seems, and not only, and not primarily, in the sphere of curative medicine. Since people fall ill, numbers of doctors and hospitals will, of course, have to be increased still more. But even so, I fear, if we confine ourselves to this, there will not be enough of anything — medicines, doctors or hospitals. Sooner or later all society's material and intellectual resources will have to be devoted to this one purpose, and people will have to spend all their time treating one another and themselves...

What can we do about it?

I think *we have above all to revolutionise people's ideas on health, illness and medicine.*

* * *

There is no need to enlarge on the importance of health. What is bad is that people do not look upon health as the work of their own hands but as something "God-given". Here today, snatched away tomorrow! *No, man can himself gain and preserve his health. Medical science can only help him*, it cannot serve up health to him on a silver salver. *It simply treats illness when health has already been lost.* But one cannot put one's trust solely in medicine — without an effort on the part of the patient, without his will-power health can neither be restored nor preserved.

What is health, and what is illness? It sounds a silly question: everyone can feel which is which. But man is so made that a disruption of the normal functioning of the body and its reflection in his mind is far from adequate. At times objective reality does not correspond to its subjective assessment. Sometimes a man who falls ill does not notice that fact, and a healthy man may imagine that he is ill.

Broadly speaking, it can be said that health is a state of the organism in which such indices as body temperature, respiratory rhythm, blood pressure, blood count, and so forth are within the bounds laid down by science as normal. What is most important, too, is that they should remain within these bounds even during intensive work or sharp changes in external factors.

What about illness? Above all, this is a state in which the bodily functions are not in stable equilibrium. The crucial indices vary from normal, either constantly or temporarily (for example, during over-strain, even when it is very slight). The reasons for violations of the norm may vary tremendously: they may be external (infection, heat, cold, etc.), or internal (defective genes, poor control by the cortex of the brain, etc.). In some cases the cause is social conditions, but frequently it is one's own folly — stemming from common ignorance or insufficient will-power.

* * *

People often say: "Oh, how hard (troubled, nerve-racking,

etc.) life is today!" Complaints of this kind are foolish.

The human organism is very reliably "designed". It was constructed for life in the wild state — to withstand hunger, cold, infection, fear, and extreme physical strain. Biologically, man has changed only a little in tens of thousands of years. "A hundred years' life span", say the gerontologists, specialists on problems connected with old age and longevity, "is quite possible given, of course, a sensible way of life and modern medical services".

In the primitive state these vital resources of man kept him going for no more than 25—30 years. Civilisation has lengthened life expectancy considerably: it has changed social conditions, and even interfered with the biological nature of man. Constant training has substantially strengthened the cortex of the brain: we remember countless images, can envisage the future, and create new combinations of movements, which are embodied in inanimate objects. The cortex of our brain listens sensitively to inner signals, too, and in accordance with them regulates our behaviour. Unfortunately these signals may, instead of being normal stimuli to action, become sources of vices.

Natural satisfaction derived from rest after work and the weariness aroused by it may lead to laziness. The pleasant sensation of repletion, combined with the possibility of appeasing one's hunger without limit may develop into gluttony, although greediness as regards food is apparently justified among animals ("when shall we have another chance to eat?"). The ability to remember, foresee, and assess has given birth to over-anxiety, to fear of illness aroused by the slightest pain.

Civilisation, technical advances, public wealth, and medicine have relieved man of many disorders that once shortened his life. At the same time they have become the sources of new diseases — most of them not dangerous although they are capable of sooner or later taking a threatening turn. Examples are neuroses and neurasthenia, insomnia, hypertension, stenocardia, allergies, asthma, etc. One can count them by the score.

The chief thing is that man has become physically weaker, and has lost some of his psychological resistance to illness. He has lost faith in health and has transferred his concern about health to doctors.

* * *

What is the attitude of medical science to this situation in which the numbers of sick are growing? (Or rather the numbers registered as sick, for among those really ill there are others who simply fancy they are ill out of over-anxiety). So far priority is being given to providing more hospitals and clinics, training more and more doctors, and improving methods of treatment. In its way this is a correct approach. But I am afraid there is no future in it.

People can and must be made healthy. Illness is not something to which man is doomed by virtue of his biological essence, it is not an inevitable concomitant of scientific and technological progress and increased prosperity, as some fatalists assert. But one should not think that the recipe for victory is more hospitals, etc.

Man bears the responsibility for his own health, he himself can restore and preserve it — by his own efforts, in some cases quite significant efforts.

Because of the time they spend on treating disorders, most doctors have none to spare for waging an active propaganda campaign for health — a campaign to get every individual caring for his own health. And those who do carry out propaganda for health are mostly concerned with warning people about the perils threatening man: "Don't overtire yourself! Work yourself into a sweat? Not in any circumstances! Take deeper breaths! Eat food with proper calorific value!" And so on and so forth.

Unfortunately, the organising spirits in medicine — both the practical men and the theoreticians — have not brought to light the real reasons why the numbers of sick are on the increase.

There is talk, for example, about the pollution of the environment. Of course we have to combat it and avert it. But in only a few places has it attained dangerous limits. Overestimation of the dangers gives rise to an agitated state of mind, brings into being various pbobias, and adds to the ranks of the hypochondriacs.

Others tell us that there is more illness because the population is ageing. There is no disputing the fact that old people account for a larger percentage of the population — after all, life expectancy is increasing! It is true, too, that today the illnesses of old age, which were "non-existent" before, are rearing their heads — that is simply because in the past people died younger, not surviving to the age when they would have been threatened with the present scourges of mankind (for example, cardio-vascular diseases, as opposed to the infectious diseases that were the bane of the past). But the trouble is that the incidence of disease can boast higher growth rates than the rising percentage of old folk!

Throughout the world, women are as a whole longer-lived than men. With an overall average life expectancy of 70 in the USSR, the figure for women is 74. For men it is 66. A difference of eight years! Why? It is not due to any in-built hereditary programming or to any biological factors. Alcohol, tobacco, early retirement, idleness, and over-eating undoubtedly play their part. In no time nature's vital resources are squandered.

* * *

Man's irresponsible attitude to his own health is encouraged by an apparently good cause — the spread of new medicines and in

general the advances made in medical science. People develop an unfounded faith in the magical omnipotence of medicine and so pay no attention to the need above all to strengthen their own physical and especially psychological resistance to diseases.

People are urged to pay heed to every little tummy rumble and rush straight off to the doctor. (Treatment in the USSR is free of charge and the doctor is under an obligation to treat the patient even if the latter is himself doing everything liable to ruin his own health). And what about domestic remedies, which are taken on epidemic scale? Self-appointed "medicos", using inexpensive and readily available medicines, forget that even the most tried and tested patent medicine may have undesirable side effects, sometimes giving rise to more serious disorders than the one it is being used to treat.*

It is essential to dispel fears of illness. With science at its present level, the majority of diseases are not dangerous to the healthy man. There is no need to listen carefully to signals from one's body, searching for symptoms of disease. There is no need to pay attention to every little pain, *no need to go running to the doctor or the chemist for the slightest reason, taking to one's bed and consuming medicines* (incidentally, a large proportion of present-day medicines are useless). One gets a pain, it goes away. The body deals with it. Tuning in one's mind to the first twinge, the first sensation of inner discomfort only leads, in the majority of cases, to an aggravation of the state of ill-health, and often produces an ailment out of nothing.

Some of my colleagues will object: "You mustn't neglect an illness!" That's true, you mustn't neglect it. But you don't have to take fright at the first twinge. If the symptoms persist for a week or two, then it really is essential to go for a check-up. In short *I stand for cosseting health, not ill-health.* A person can only allow himself the luxury of not fearing illness if he keeps himself in top form.

What does this involve? Above all, three things: *physical exercise, restraint in eating, and proper rest and recreation.*

* * *

Let's begin with the first of the three. Nature has given man great reserves. It is possible to increase tenfold the productivity of the heart, the ventilation of the lungs, the functions of the kidneys, and the power of the muscles. But *these innate reserves can be maintained only by means of regular exercise throughout one's life.* If one slackens, the cells atrophy. To restore one's strength requires great effort, and it is not always possible, by any means.

* See article "Medicine! Beware!" by Alexander Bilibin in our July 1970 issue.

A means of maintaining one's reserves is physical exercise.

The cautious medical men are likely to object here, scaring people with the danger of overdoing things. I am convinced that what is needed is a considerable load, and rapid tempoes — 1,000 movements in 25—40 minutes. Until the sweat runs, until one is short of breath. (Don't be afraid of this in your work!) A guarantee of safety is gradual training. To reach the maximum load for a *healthy* person will take six months. What about someone who is not in good health?

For the majority of people with minor chronic ailments, where there are more subjective complaints than objective signs, physical exercise is the finest medicine. But it is necessary to consult a doctor, cut training rates by half and maximum load by a quarter or a half. It is immaterial what kind of exercise is taken.

Tennis is good — even if only three times a week. Running should be done daily for half an hour. Then there is skiing or gardening — anything will do as long as it brings all the muscles into play, with sufficient load and without let-up. The most convenient thing is morning exercises. Although it is a little boring, it does not require additional time for training, nor does it depend on the weather. Furthermore, one should walk where possible, and walk briskly.

* * *

The second point is diet.

People eat considerably more food than they need. This begins in childhood. The organism learns how to deal with the surplus food so that the individual may derive pleasures from eating.

Appetite is rather the habit of eating, a function of the mind, than an objective signal of the body demanding energy for the cells. Intake of food should be cut down to the point where weight does not drop below normal, and is subsequently maintained, with weight checks as often as possible. There is a well-known formula for calculating "normal" weight — height (in centimetres) minus 100, which gives the weight in kilograms. But this was worked out for people engaged in physical labour. Others should drop another 3—5 kilogrammes.

What should be eaten? We need protein, vitamins and trace elements — but in such a way that there is considerable bulk and few calories. The best kind of combination is at least half a kilogram (just over one lb.) of raw fruit and vegetables of various kinds per day, and the rest meat, milk, cottage cheese, eggs and rye bread. Don't go on eating until you are full, watch your weight, and then you'll get to know how much you can have. Don't be afraid of feeling hungry. It will not hamper your work. Just remember that vitamins and protein are essential. Only young people or those engaged in heavy manual labour should indulge in sweet and fatty

Hard Work but Essential to Health

A set of morning exercises devised by Professor Nikolai Amosov

1. Knees bend, holding on to the back of a chair — 100 times.
2. Trunk bending, to left and right — 100 times.
3. Press-ups — up to 50.
4. Bending forward from the waist — 100 times.
5. Arms outstretched, raise sideways till they meet overhead — 100 times.
6. Trunk twisting — 50 times.
7. Sit on a chair, anchor your feet beneath some weighty piece of furniture, and bend backwards and forwards — 100 times.
8. Hop on the spot — each leg 100 times.
9. Bend arms across the body at chest level, do elbow movement backwards — 100 times.
10. "The Birch Tree" (lying on back, supporting back with hands, and raising legs and abdomen as high as possible so that you stand on your shoulders while you count to 100.
11. As at 10, but without support of hands — 100 times.
12. Contract the abdomen — 50 times.

foods. Cut down on the salt — it conduces to sclerosis and hypertension.

* * *

The third factor is proper rest and recreation. But it should involve effort! *Don't run away with the idea that idleness makes for health and a long life.* Work is vital. It occupies the mind, does not allow one to keep looking for symptoms of disease, gives one an aim in life and tones up physical and psychological condition. One should do a great deal of work, to the point of fatigue. *But do not economise on sleep.* Another thing

— the fear of insomnia is just as harmful as insomnia itself. But there is no need to take sleeping pills. Just lie down calmly and wait — sleep will come. You will sleep just as much as a healthy person needs to.

A health regimen has no age barriers, and is more important for those getting on in years than for the young, for it helps restore reserves exhausted with age. Details of the regimen should, however, be prescribed by your doctor.

There is a saying that one has to suffer in the cause of beauty. *To be healthy, too, one must suffer a little.* The feeling of vigour and lightness that results is well worth it. The best thing of all, of course, is to make your health regimen just as habitual as washing your face. Your body functions with a daily rhythm.

* * *

To what extent can one hope to regain lost energy? Can old age be overcome? It can, evidently, be postponed, and for quite a time — by ten years, if not more.

Physical exercise and diet have a direct effect on the cardio-vascular, respiratory, digestive and articular-muscular systems. With a rational regimen some diseases will vanish, others will become rarer, while still others will be put off until a later age. All of them will be less troublesome.

I believe that the right regimen can relieve or cure stenocardia, hypertension, disorders of the nerves, muscles and joints, metabolic disturbances and many diseases of the stomach, intestines, liver and kidneys. Resistance to infection is raised, and restoration of the reserves of the heart and lungs diminishes the risk of any acute illness.

A propaganda campaign for a health regimen, for physical exercise and moderation in eating will be enough for those who have not yet lost their health but want to keep it and strengthen it. For those who have lost their health and are anxious to regain it, more detailed and differentiated instructions are necessary, and here a doctor must be consulted.

* * *

We need health doctors. We should have special health clinics. In them would be small laboratories for measuring and calculating the reserves of the organism. Various kinds of tests, X-ray checks and objective data on the functioning of lungs, heart and metabolism would determine the degree to which a person was "out of training", how far his health had been weakened. Health doctors would be under an obligation to notice signs of serious illness requiring special attention, and in this they would have the assistance of specialists. After investigation, they would begin treatment. But treatment, not the dispensing of medicines. Regimen, diet, physical exercise, the proper amounts of work and rest, means of checking on oneself, and a date for a second appointment.

I think such clinics should have a special status, and the doctors working in them have not only obligations but also rights. They should be able to refuse to continue treating a patient who was not carrying out their instructions. Perhaps it would be a good thing to charge a small fee, to discourage hypochondriacs.

This generation of doctors has been trained in accordance with the formula: "Do no harm. Rest. Food. Medicines." But what is needed is movement, hunger.

It is hard to vanquish passivity. Hard but essential. Otherwise in a couple of decades we shall have half the population ill and the other half looking after them.

NEW TECHNIQUES IN ARTERY REPAIRS

Autotransplantation, or the use of a patient's own healthy arteries or veins to replace injured blood vessels, is now in use by the Moscow Institute of Clinical and Experimental Surgery.

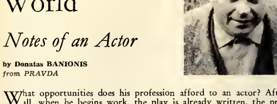
The usual means of repairing such injuries has been to use artificial replacements, a crimped tube of teflon or other synthetic material being inserted where a vessel has been damaged. But artificial materials cannot be used in some parts of the body, such as the joints of the extremities.

In such cases the institute suggests transplantation of a piece of blood vessel from another part of the body. Blood vessels of the arm, for instance, have been repaired by lengths of the great subcutaneous vein, brain vessels by tiny vessels taken from the thigh and kidney vessels and intestinal arteries by pelvic vessels.

A basically new operation introduced by the institute helps in cases where an artery is obstructed by a thrombosis. The affected part is temporarily removed, the blockage is cleaned out, and the part replaced. The same technique is used when there is severe vascular damage and in other emergencies. Normal blood circulation is quickly restored in such cases.

from the newspaper VECHERNYAYA MOSKVA

One's Place in the Modern World



Notes of an Actor

by Donatas BANIONIS
from PRAVDA

What opportunities does his profession afford to an actor? After all, when he begins work, the play is already written, the producer has his own ideas about its interpretation and there seems to be nothing left for the actor apart from the need to fall in with what is already decided. From the formal point of view all that is correct. But then the actor's personality, his human individuality, the sum total of his abilities and views are inevitably revealed in everything he does. I am convinced, even, that this personal individual quality displays itself in an actor with particular, more tangible, perhaps, obviousness, because he recreates the character of a man, directly, one may say, from his own flesh and blood.

If that were not the case, if the actor simply "put life into" what had been created by others, all the Hamlets on earth would be like one another and all the Juliets too. But they differ not only in appearance, age and producer's treatment. The time makes its demands on the artist. It forms his personality, it crystallises and clarifies his conception of the world.

It is obvious that somehow or other each role played bears the imprint of the actor's personality. He cannot get away from himself because he can play only that which he knows. Of course, this does not mean that the actor and his role are identical, but here we are not talking about similarity or even less of identity, but of civic passions, of the artist's point of view, of his desire to understand reality.

You may or you may not think about this, but as you emerge onto the stage you undergo everything that the spectators undergo, and you try to honestly and sincerely get to grips with what moves and

stirs them. And if circumstances are favourable, that is if you are in good form and the role is also a good one, you will be able to strengthen the faith of the audience in ideas which are also dear to you yourself.

But if the actor is able to add to a role something of himself and not only to convey another's idea in a lively and entertaining way, this lays upon him special responsibilities. The artist must clearly see his place in the modern world, he must define and affirm his own thoughts. This has always been the case and today it is just the same; it is simply that the demands upon an artist are now higher and the necessity to define one's position is more imperative.

Who are you? What do you consider evil and what good? Are you prepared to uphold your convictions and have you chosen your position correctly? The moment of self-determination in life, a moment through which every thinking person must pass, is a very difficult and responsible one.

There are cases when a person honestly believes that his viewpoint is progressive, whereas in actual fact it is almost the reverse. But if we recall the past, then we must admit that the creative work of great artists has always been distinguished by clear definition of conceptions. To paraphrase a saying: when you made your choice you were born anew.

What helps you in your choice? I believe it is certain related and inseparable criteria. Above all, your conscience, your attitude to the world, your philosophy. For us Soviet people, this means the ideals of communism. But to name a particular fine idea as your own is not enough. You must live through an idea, must experience it, suffer it. Then it really will be yours.

A favourite thesis of bourgeois art scholars is that the artist must be absolutely free, otherwise he cannot give his all to his creative work. I am, of course, for freedom, without which not only an artist, but any human being is unable to work. But all this talk about freedom from society, from public tasks, seems to me basically to lack seriousness. Yes, of course, the artist must be responsible to himself. No one, probably, would argue with that. But after all, he himself is a member of society. And the more important the artist, the more deeply he is linked with the lives of people, the more his work will be filled with passion. Passion is the main thing within you, your creative "I", your position as a citizen.

Practical experience — both of my colleagues and myself — has plainly shown that more or less stable success comes when we try to pose social problems in our work. Real contact with the audience is established only if you have a definite position. An artist who is without one will eventually become uninteresting even to those he so wanted to please. Furthermore the question of an artist's relations

with the public is by no means as simple as it is sometimes made out to be.

I am not generalising, I can cite only what I have directly encountered myself. In our little Lithuanian town of Panevežis many theatre-goers became accustomed to plays about everyday life, constructed on traditional lines and developing smoothly. In our repertoire works of a different kind have made their appearance constructed on a combination of planes, with the action turning first to one and then to another period, and at the same time imbued with tremendous emotion. In order to appreciate such plays a certain effort is needed. Many theatre-goers were indignant, stopped coming to the theatre, and we were worried by doubts. Now, however, these plays, too, have a regular audience.

It is necessary to uphold, to carry out propaganda for what you are absolutely sure about, you have to take — in artistic matters, too — a certain risk. The taste of theatre-goers really does need educating. But, I repeat, you can sway someone's convictions only when you yourself have an excellent knowledge of what you are defending, when your ideas correspond to the progressive aspirations of the time.

Unfortunately, it is not every role that gives the actor a chance to express himself. Personally I prefer to turn down parts which are written weakly and unconvincingly.

A man whose fate it is on the screen or stage to be instructive, to make the audience think — such a person has a duty to think, to seek, and to make a choice. After all, even the most correct basic principles do not automatically ensure an understanding of all the complex questions of life, a correct solution of life's specific problems. Such a process is always dramatic in its own way, and the task of the artist is to convey that drama.

It is an axiom that an actor is enriched by an interesting role. It does not matter whether it is a positive or a negative role, but it must be one that confirms his own ideas. He begins to analyse the role, the character's thought processes, motives for his actions; in fact, he begins to think and to philosophise. At the same time he virtually lives the life of that man within himself, in this way enriching his own inner world.

Talent must be combined with ideological conviction, and great self-exactingness — only then is it possible to really get inside the role. I admire our finest actors precisely because of their active part in the life of the people.

One must be born with talent, but if it is to be developed, to be raised to the highest possible level, it must be inspired by the most advanced ideas of the time.

Giants from KOLOMNA

by Vyacheslav **DEMIDOV**, engineer
from KOMSOMOLSKAYA PRAVDA

Machine-tools made in Kolomna, a small town about 75 miles from Moscow, are exported to many countries (Britain, West Germany, France and Japan among them). Kolomna's vertical boring and turning lathe is the pinnacle of precision, for it can do work on huge steel castings weighing thousands of tons with an accuracy measured in microns (one thousandth of a millimetre).

This monster of a lathe could be compared to a fragile Stradivarius because of the fabulous attention to detail in its construction. But such unique feats of engineering are not the doing of some virtuoso craftsman but are the work of large groups of experts in various fields.

There are of course countries, plants or teams of designers with a reputation for the almost virtuoso manufacture of a particular type of machine.

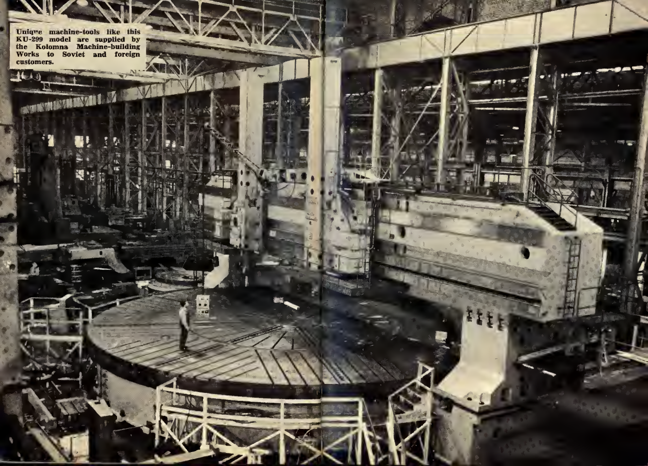
Kolomna and its vertical boring and turning lathe are like that.

The lathe is an immense affair, one part alone weighing 100—150 tons.

It can machine parts of a turbine, some of which are so large that they dwarf a building several stories high.

A piece like this slowly revolves on its giant and ideally flat disc called a faceplate, which looks very much like a merry-go-round.

At one time the only firm that manufactured machines anything like this was Schiess, which still operates in West Germany. In the early days of industrialisation in the Soviet Union (the late 1920s and early 1930s) the Soviet



Unique machine-tools like this KU-299 model are supplied by the Kolomna Machine-building Works to Soviet and foreign customers.

Government placed an order with Schiess for a boring and turning lathe which was later installed at a plant in Leningrad, where it is still doing sterling service.

But when a second Schiess lathe of this kind was ordered, only half the shipment came through — the war had begun.

In 1947, a small plant in Kolomna, near Moscow, got the job of trying to manufacture the missing parts for the Schiess machine. So began an unannounced competition between an old and established German firm and a new Soviet plant with a young, inexperienced staff who had never tackled a job of this magnitude. Twenty years later, in 1969, the Kolomna plant won the competition. This is how.

It took them months of hard work to make the missing parts and get the lathe working. But they did it. The faceplate they built was big enough to machine pieces as tall as an 8-storey house. Later, the Kolomna plant specialised in manufacturing turning and boring lathes ranging from 30 to 2,000 tons. The maximum cutting diameter on a lathe ordered by a Kharkov turbine manufacturing plant in the Ukraine is 20 metres, for a Romanian plant — 16 metres.

It is interesting to note that the lathe, the KU-299, which won in the competition with the Schiess firm, is no bigger than the one now operating in Kharkov. Its strong point was not its weight but its precision — it could work to a tolerance of 40—60 microns.

Once a foreign firm announced that it needed a lathe that could turn out parts weighing 500 tons and measuring 20 metres in diameter (this was part of a turbine base). By that time Kolomna lathes were already at work at plants in Italy, Britain, Finland, Belgium, France, Japan and the German Federal Republic itself. There were two contenders for the order — Kolomna and Schiess.

The foreign firm — let us call them "X" — sent their experts to the plant in Leningrad where they examined both the old Schiess lathe and the combined Schiess-Kolomna lathe made right after the war. They also took a trip to Romania to see the Soviet lathe there. After that "X" had this to offer: they were prepared to buy either the Schiess or the Kolomna, but they would pay only a certain amount and not a penny more.

It is important to know that the market price of this sort of lathe depends on its weight. Once you know the weight of the lathe, you know its price as well. So if Kolomna was to get the order, they would have to think of a way to reduce the weight of the lathe by 30 per cent, if not more.

This was quite a knotty problem but the Kolomna engineers found the solution by modifying the design of the machine. The firm liked the modifications and placed its order with the Soviet plant.

But the KU-299 is not merely a lighter version of the older machine. It is more versatile. In the first place it can double as a milling machine. It can also work on castings of various shapes by using a special electric profiling device.

When a lathe like this is built every one of its parts must come out right first time. There is no second chance, for any changes or replacements cost so much it would not be worth continuing the job if any part was spoiled.

At Kolomna, they have to be on their toes every minute, but in addition to this extra careful attitude, the engineers there develop an almost Stradivarius intuition!

The base for a KU-299 is a complex structure with many compartments. Going nearly ten feet underground, it contains engines, D.C. power generators, pumps, and an apparent tangle of other equipment. Under this is a concrete foundation nearly 40 feet thick to shore up the supports holding the faceplate. The whole thing rests on a cushion of sand and gravel to prevent the slightest tremor in the ground from reaching the business end of the machine — the cutter and the faceplate.

GEORGIAN CAVE TOWN TO BE SAVED

Eight hundred years ago a fortified monastery-town was hewn out of solid rock within a 4,000 feet high cliff in the mountains of Georgia (the Caucasus). Several hundred caves — ranged in 13 tiers — were fitted up for religious purposes, as cells for monks, dwellings, and ancillary premises. There were even secret chambers.

Vardzia, the name of the town, means "City of Roses" in Georgian — perhaps there was a touch of nostalgia here. Altogether it had 15 chapels and churches, the most important being the Church of the Dormition, in which interesting frescoes based on religious and mythological subjects have survived to this day. Here, too, visitors can see one of the four surviving portraits of the Georgian Queen Tamara.

Now this fascinating relic is endangered by rock movement in the vicinity, and the problem is being studied by scientists from various research institutes. So far they have succeeded in saving the splendid bell-tower, Vardzia's only separate structure, which was about to collapse.

From the newspaper SOVIETSKY SAKHALIN

Izzet Oroujeva in a laboratory of the Institute she heads.

by Vanda BELETSKAYA
from the magazine OGONYOK

Film Star, Scientist, Grandmother

"She still resembles very much the heroine of the film **Sevil,"** was my first thought when I was introduced to Izzet-khanoum Oroujeva, director of the Institute of Inorganic and Physical Chemistry of the Azerbaijanian Academy of Sciences.

The pretty, fluffy-haired woman with elongated eyes looked too young to be a grandmother, though I knew she was. And she brought to mind the picture of a proud Assyrian princess, rather than what she really is — a famous chemist, associate member of the Azerbaijanian Academy of Sciences, author of more than 170 scientific works, holder of the Order of Lenin, the Soviet Union's highest award.

But Izzet-khanoum Mirza-aga Oroujeva became famous almost half a century ago for something far removed from science. In the late 1920s she challenged age-old prejudices and became the first Azerbaijanian woman to play a film role.

At a lecture on the history of cinematography I saw fragments from this film, **Sevil,** made by Djafar Djabarly, a well-known writer and producer. The lecturer paid tribute to the producer's talent and went on to praise the young actress who had blazed a heroic trail in the field of women's liberation.

At our first meeting I did not

ask Izzet-khanoum about this page in her life story. We talked about oil, for almost everything in Baku is associated with it. My hostess was welcoming and showed me around the Institute laboratories. I asked about her experiments, her work . . .

But later friends and colleagues of Izzet-khanoum talked about her early life, her struggles and her venture into the world of film-making which affected not only her future but also the future of a whole generation of Azerbaijanian women. From the various accounts I was able to piece together this story.

* * *

Mirza-aga Street, a typical street in old Baku. It bears, by coincidence, the same name as Izzet's father, who was a gardener by trade. His neighbours still remember him as a kind and wise man who loved his work, flowers and children.

There were five children in the family. Izzet was the eldest. Mirza-aga's daughters were the first in their street to take off the yashmak (the Moslem veil). Before the 1917 Revolution the street was called Chadrovaya (Yashmak).

Nine years in a secondary school. Then the Polytechnical Institute. Not everything in Izzet's life was to her liking. She wanted to become a specialist in oil chemistry, but women at that time could not enroll in this department. So she was studying construction. But she also had to help support her family, and held a job as a typist.

Djafar Djabarly, a talented Azerbaijanian film director, was searching for an actress to play a leading part in his film Sevil and met Izzet by accident. He offered her the role but she refused to consider the offer seriously, let alone visit the studio for a screen test. She felt that she would never get permission from her father to appear before film cameras.

The director met Izzet's family and pleaded with them. The father did object, strenuously. But Djabarly managed to persuade old Mirza-aga and his young daughter to read the script. That was what won them over.

The choice proved to be right — Izzet was a born actress, intelligent, subtle, deeply dramatic, quick to catch the smallest nuances in the script. She worked hard, with entbusiasm and passion. Only one thing upset Djabarly — even when the shooting was in full swing Izzet Oroujeva refused to miss a single lecture at the institute. The gentle, rather timid girl was as obstinate as a mule.

The success of Sevil surpassed all expectations. Thousands of Azerbaijanian women owe a debt to this film for their spiritual emancipation. Whenever the film was shown, in mountain villages or in city cinemas, black veils would be found left on the seats after every showing. Women followed the example of the film heroine and went out into the streets with their faces and ears open to the new life.

But few people realise how this film affected Izzet-khanoum herself.

In the institute she succeeded at last in switching to oil chemistry. Her work engrossed her more and more. She was torn between science and art. And they both demanded wholehearted devotion as a prerequisite to success.

Her teachers, the director Djafar Djabarly and M. A. Kapelyushnikov (scientist and engineer, inventor of the world's first turbo-drill) understood the girl and tried to help her make up her mind.

"It cannot go on like this, Izzet," the director tried to convince her. "You'll get sick. Acting is not just a matter of talent — it also requires hard, daily application. One has to give everything to art — time, heart, intellect, thoughts. You must abandon chemistry and become a professional actress."

"If you want to achieve something, you must choose either films or science," the scientist told her. "Remember, one cannot kill two birds with one stone."

The new film Almas enhanced the fame of the first Azerbaijanian female star. Critics were predicting a brilliant future. But her inner conflict grew sharper.

At home she was not advised one way or the other: nobody tried to influence her. Everyone was extremely kind and tactful and waited for Izzet to make her own choice.

She chose science . . .

* * *

Every morning at seven-thirty Izzet-khanoum would leave her home, walk to the station and take a tram. The tram moved slowly through Baku and its suburbs to the Black Town. Oil-refineries and her institute were located there.

After lectures she would rush to the opposite end of Baku to teach at an adult evening school. And at home she had to help bring up her four brothers and sisters: the youngest brother was 16 years younger than herself. And then Izzet married and when her son Ilmaz was born she had a family of her own to take care of, in addition to helping her brothers and sisters.

At the school where Izzet was teaching pupils were sometimes older than their teacher — illiteracy was being wiped out all over Azerbaijan.

Many of her pupils thought that everything shown in the film **Sevil** had happened in real life to their young teacher.

The war came... and after years of bitter struggle victory was won. Immediately after the war chemists in Baku started to evolve substances which change the properties of lubricants.

Previously the country had imported them from abroad and the secret of their production was carefully guarded. After the war imports into our country were considerably reduced. There was only one solution — to learn to produce them ourselves.

Ali Kouliyev, Oroujeva's scientific supervisor who later became an Academician and director of the institute, began to try to unravel the secret. Later Izzet-khanoum Oroujeva joined him. There was no theory of these substances to guide them. There was only one path forward — experiment, experiment and once again experiment. This is a long and often disheartening process. There are millions of organic compounds and scientists by the method of trial and error drive ahead in their research.

In 1947 Izzet-khanoum defended her thesis for a Master's degree: "Ways and Means of Improving Lubricating Oils." In 1962 she defended her thesis for a Doctor's degree on the same subject: "Production of Power Oils with New Properties."

Usually the atmosphere at such ceremonies is restrained. But when Izzet-knanoum finished her report on her Doctor's thesis, there was a storm of applause.

* * *

Izzer-khanoum, who had just recently become director of the institute, showed me around the laboratories. In her office a huge desk was heaped with papers. Before leaving for home she put them in a big file. One manuscript was to be edited before publication in a scientific journal. Another was to be reviewed. A third had to be scanned in order to advise a young chemist whether it was worth pursuing the subject further. In addition, there was a whole batch of letters from former pupils, many of whom were grandmothers now. Izzet-khanoum has grandchildren too, though one finds that hard to believe when looking at her. Her son is a geologist, a master of science.

Oroujeva picked out letters from her colleagues abroad, invitations to scientific conferences. She has attended many such gatherings. There were letters from Canada — she was once there as a member of an official delegation: from Budapest — she was there doing scientific research: from Berlin — she made a report at a symposium held by German chemists.

* * *

The first Azerbaijanian movie star never became a professional actress. But her whole life has been an echo of her heroine's part in the film...

It is difficult for Izzet-khanoum's grandchildren to picture their grandmother young and a film-star at that.

MECHANISING THE SUPER-MARKET

from the Soviet PRESS

The store opened in Bukharestsky Prospekt, in Leningrad, in September 1970, was the first of its kind.

Its total floor area is about 4,000 square metres, 1,200 of which are occupied by the sales hall. Its monthly takings come to about one million roubles. But there is more to it than that . . .

"The first deputy chief of Leningrad's Trade Board told me about the work of several stores," reports Konstantin Barykin, from the magazine **Ogonyok**. "One has a beautiful interior. Another, magnificent lighting. A third, an interesting layout. A fourth, mechanised and automated labour-consuming operations. And so forth. This store combines all these advantages.

"I arranged with a friend that he would go to the former Yeliseyev* foodstore in Nevsky Prospekt and that I would go to the just-opened self-service super-market. Before doing our shopping we listed the items to be bought: each had to get some cheese, ham, stewed fruit, sweets, a cake and a bottle of wine," says the correspondent. "We entered the stores, switched on our stop-watches and got down to work. In 4 minutes 37 seconds I stepped up to the cash-desk. In another minute I got a check, which contained all essential information: the price of the purchases (all together and each separately), the denomination of the bill handed in, the amount of change and even 'Thank you for patronising our store'. Very sensibly, nobody took away my check: it was for the customer's convenience, in case he wanted to check anything.

"I rang up the Nevsky Prospekt provisions store. My fellow-experimenter was only approaching "mid-course": in one of Leningrad's most popular stores the "operation" took ten times as long . . ."

The new self-service super-market offers all kinds of food ranging from vegetables to bread, as well as some household goods, like frying-pans, basins and sieves — about 1,500 items in all.

The proportion of manual work is minimised. The store employs no book keeping staff: all calculations are carried out by electronic equipment. Packing and wrapping are done by automated conveyor belts.

A button is pushed, and the huge grille of the gate closing the entrance to the service rooms rises. A lorry drives up and proceeds

* Yeliseyev was the owner of some large, well-known provisions stores in czarist Russia: after the 1917 Revolution they were nationalised.

One of Leningrad's "Universams". Many more are being opened in other parts of the Soviet Union.

straight into the building: there are no basement supply-hatches as in so many old stores. What appears to be a barely noticeable architectural novelty — the absence of door sills — is in reality a carefully planned advantage: everything is on the level, and convenient for lorries, carts and other vehicles. The result is a saving of as much as 30 minutes per ton of goods handled — and the store sells dozens of tons a day.

Even the unloading of meat is mechanised. Then the carcasses are weighed, picked up by hooks, to be transported by overhead rail to the refrigerator. Or — another possibility — the flick of a switch can send them to the cutting shop, where a special saw cuts the carcass into several pieces and divides the meat into portions.

Ham, sausage and cheese can be sliced by an automatic machine, which places each portion onto a sheet of cellophane or polythene and wraps it. Next, it weighs the package on electronic scales, and as it does so, a check is stamped with the weight, price per kilogram and the price of the portion. This is stuck to the wrapping.

The packing proceeds in a vacuum on fourteen machines, and the food, is not touched by packers' hands at all.

The packed foods proceed to the sales hall. Perishables go to ten refrigerated containers, bright with stainless steel and coloured plastic. The food is arranged on eighteen rows of shelves and counters, and the whole layout — position of counters, aisles and cash-desk — is designed to provide the maximum of convenience for the customer.

Closed-circuit television keeps an eye on the level of stocks in the sales hall so as to give the signal for replenishing emptying shelves in time. Enquiry telephones available in the sales hall enable people to find what they want.

The store has a chief engineer, a technician (say, a fitter) and an interior decoration expert on its staff — but not a single salesman. Girls in snow-white overalls by the shelves only replenish stocks. They give advice and provide information about new goods.

The shopper can proceed with his loaded trolley to any of the fifteen cash-desks, where, within seconds, the cashier gives her a check and her change. On the trolley, by the way, there is a seat for a toddler.

In winter it is warm but not hot in the store. In summer, even on hot July afternoons, it is cool — the coolness comes from dozens of open refrigerated shelves. The service rooms are air-conditioned.

Such stores can handle from 13 to 15 thousand customers a day. About as many customers pass through Moscow's largest super-market, in the city's extreme north-west. However, the new store employs half as many workers as the old-type shop of comparable size. True, it has to have at least fifteen cashiers. But, using modern

cash-registers, they work easily and fast, operating their machines by touch like good typists.

The new store sells two or three times as many goods per square metre of sales space as the old kind and can boast the minimum running costs.

In September 1970 Leningrad opened another two such stores, in Zamshina Street and Prospekt Nauki.

It was the Russian Federation Trade Ministry that took the initiative in the building of such stores, while the Leningrad City Council and the Leningrad Trade Board jumped in with particular energy and enthusiasm, getting these new super-markets up in record time.

Before long, the Russian Federation will have another ten such stores, in Moscow, Novosibirsk, Sverdlovsk, Gorky, Vladivostok, Kuibyshev and Sochi.

"This is a new stage in the development of retail trade," is the opinion of Dmitri Pavlov, Russian Federation Minister of Trade. "But we must provide many more of them. That is what our ministry is now aiming to do."

This automatic packing line for fresh foods is an example of the technical aids being introduced into Soviet trade.

It quenches any thirst (except the thirst for more- and more!)

KVAS a unique, really Russian soft drink, for centuries and centuries

the most popular NON-ALCOHOLIC BEVERAGE all over Russia

delicious, refreshing, vitamin-packed,
nourishing, contains no caffeine,
good for all stomachs, suits all ages

readily prepared
from KVAS CONCENTRATE

Exported by sole wholesale exporter
V/O "SOJUZPLODOIMPORT"
Moscow G-200
USSR
Telex 262

SOJUZPLODOIMPORT

CHRONICLE OF THE FIVE-YEAR PLANS

In the spring of 1920 a group of scientists, engineers and economists — the State Commission for the Electrification of Russia (GOELRO) — began, on Lenin's instructions, to draw up the document that subsequently became known as "the GOELRO plan".

The plan formed quite a voluminous book. It represented the first-ever attempt to plan for many years ahead the coordinated development of all branches of the economy of our vast country.

The construction of thirty state power stations with a total capacity of one and a half million kilowatts was laid down as a task of the immediate future.

Power engineering had to serve as the pivot around which all branches of the economy would develop. Lenin unequivocally named the GOELRO plan "the second Communist Party programme".

The basic theses of GOELRO set the trend for Soviet state planning for decades ahead. And on the basis of the GOELRO commission there later came into being GOSPLAN of the USSR, the country's central planning agency.

First Five-Year Plan

The main task here was to ensure the rapid industrialisation of the country. During the five years (1928-32) a total of 1,500 big enterprises were built, primarily in the traditionally industrial areas of the Donets basin, the Urals and Siberia.

In addition to the Magnitogorsk Iron and Steel Works, which became a kind of symbol of the First Five-Year Plan, other large enterprises of importance to the economy were

built, such as the Stalingrad Tractor Plant, the Gorky Motor Works, the Dneproges (the hydro-electric station on the Dnieper, in its time the biggest in Europe), the Turksib (Turkestan-Siberian railway), and Rostselmash (agricultural machinery works in Rostov-on-Don).

At a time when the whole capitalist world was in the throes of an unprecedented crisis, the USSR was shooting ahead. Unemployment was finally eliminated.

The measures set out in the First Five-Year Plan were completed ahead of time, in four years and three months. The USSR had been transformed from a primarily agrarian country into an industrial one.

Second Five-Year Plan

Under this plan (1933-37) the development of heavy industry, the basis of the state's independence and defence capacity, continued to develop at the same high tempoes. The main emphasis was laid upon re-equipment of all branches of the economy, on replacing the old machinery with the new one.

As with the previous plan, the economic tasks were completed before schedule, in four years and three months. Three times as many major industrial enterprises were built this time — 4,500. Among these were such big undertakings as the Novotagilsky Iron and Steel Works and the Kuznetsk Iron and Steel Combine.

In 1937 — the twentieth anniversary of the Revolution —the USSR caught up with and overtook France, Britain and Germany in overall industrial output.

During this five-year period the Soviet countryside went over completely to cooperation, the collective farming of the land. The state provided the cooperatives with land, for use in perpetuity and without charge, and machinery was made available to them on favourable terms.

By the end of the five years the Communist Party was able to say with satisfaction that the socialist system held absolute sway in the country's economy. The national minority areas on the periphery of the USSR were developing particularly fast.

Third Five-Year Plan

The political aspect of the tasks of the Third Five-Year Plan was formulated by the Eighteenth Party Congress. That was in March 1939.

The international atmosphere was as tense as it could be. In the new plan, peaceful and constructive in its essence, there had to be shifts of emphasis. In the interests of defence, a number of factories were built beyond the Volga and the Urals.

The Third Five-Year Plan was to have been a big step towards completing the building of socialist society. The fulfilment of

this plan, however, was disrupted by Germany's attack on the Soviet Union in June 1941.

Joseph E. Davies, former US Ambassador to the USSR, wrote at the time: "... The occupation of the Don Basin and Western Russia by the Germans will deprive the Soviet Government of enormous manufacturing recources. But it should not be overlooked that east of the Volga there is a vast section of country and a highly industrialised region...

"Even in 1938, the production of machine tools, tractors, tanks, airplanes etc., produced in this area approximated 30 per cent of the total produced in the Soviet Union."

In March 1942, war industry in the eastern areas of the Soviet Union was producing as much as the whole of the USSR's prewar industry. And in 1943 Soviet war industry surpassed its German counterpart in important items, in particular the production of tanks and planes.

At the very height of military operations the Soviet government began to lay the economic foundations for the rapid rehabilitation of the economy in the areas temporarily occupied by the Germans. The losses there were on such a scale that one can hardly imagine anything more vast.

On the territory of the USSR the nazis destroyed 1,710 towns and 70,000 villages, they pillaged the property of 98,000 collective farms and 1,876 state farms. They put out of action 32,000 industrial enterprises (two-thirds of the total number in the USSR) and 65,000 kilometres of railway line.

The most terrible and irremediable loss of the Soviet people was the sacrifice of 20 million lives. The country's development was effectively held back for more than a decade.

Fourth Five-Year Plan

The principal task of the Fourth Five-Year Plan, for 1946-50, was formulated thus: to rehabilitate the war-devastated economy, to reach the prewar industrial and agricultural level, and then to surpass it substantially.

The ability of the socialist state to concentrate all its efforts in the direction of the main blow was proved in practice. In 1948 the USSR succeeded in attaining the prewar level of industrial production, while by the end of the plan period it had surpassed it by 73 per cent.

Certain sacrifices had, of course, to be made to achieve such growth rates. Output of producer goods rose by 105 per cent above the 1940 level, while consumer goods production increased by only 23 per cent.

Fifth Five-Year Plan

By the beginning of the Fifth Five-Year Plan (1951-55) the measures needed to wipe out the consequences of the war had in

large measure been carried out. The state's long-term plan for this period was drawn up fully in accordance with the laws of normal, peaceful development.

In 1951-55 the process of automating the power and engineering industries was intensified.

New power stations and gas pipelines were built and the Volga-Don Canal was completed. In 1954 the world's first atomic power station, at Obninsk, near Moscow, began working.

Prices of consumer goods and foodstuffs were several times reduced during the Fifth Five-Year Plan period, and this particularly applied to bread, meat and butter. The plan was fulfilled in four years and four months.

Sixth Five-Year Plan and the Seven-Year Plan for 1959-65

From this time on, all the plans contained concrete measures for creating the material and technical basis for communism.

When in 1957 the first-ever artificial sputnik of the Earth — made in the Soviet Union — was launched, and when, four years later, Yuri Gagarin became the first man to orbit the Earth in a spaceship, everyone outside the Soviet Union began to realise that behind these dazzling records were tremendous achievements in science and engineering.

This period saw the implementation of the programme for cultivating virgin and unused lands — primarily in Siberia and Kazakhstan. An extensive programme for technical progress in all spheres of the economy was carried out. In particular, mainline railways went over to electric and diesel traction.

The Twenty-First Congress of the CPSU, in endorsing the plan for 1959-65, noted that socialism in the USSR had sustained complete and final victory: the Soviet Union had embarked upon a period of comprehensive construction of communist society.

The plan for 1959-65 was fulfilled ahead of time. The material standards of the people rose, taxes were abolished or reduced for a considerable part of the population, and pensions were introduced for collective farmers. Nearly 17 million flats and houses were built in towns and villages.

Eighth Five-Year Plan

A radical speeding up in rates of progress in science and engineering made it possible to look with rather different eyes upon the problem of administering so complex an organism as the Soviet economy.

A new system of planning and economic incentive was worked out during the eighth five-year period, which became known as the "economic reform". The programme envisaged a gradual increase in the economic independence of enterprises and branches

Continued on p. 48

The People's Well-Being the Main Task

by **Nikolai OLEKHOV**, *Novosti Press Agency*

The new five-year plan for 1971-75 differs from all its eight predecessors in that the main task laid down in it is to achieve a substantial increase in the well-being and cultural level of the people.

Much has already been done in this direction during the years of Soviet power. For a long time, however, the possibilities of the first socialist state were limited. The age-old economic backwardness inherited from czarist Russia, the war imposed on us by the capitalist world, and the restoration of what had been destroyed — all this meant that Soviet society had first of all to develop heavy industry, the foundation of the economy, rather than light industry.

Ill-wishers abroad, and above all those running the propaganda machine, with envious obstinacy continued to give a distorted picture, throughout more than one decade, of the aim of Soviet development. Saying nothing about what was being done for the people, they claimed that socialism was capable of developing "nothing but heavy industry".

Were we right to take the line we did? Was there no other way? The last war gave a convincing answer to that question. As the Soviet writer Ilya Ehrenburg aptly put it, our first trenches in the fight against fascism were the foundation pits dug for the first Soviet factories.

Developed heavy industry enabled the country to be independent, to defend itself.

But that was not the only thing. Nor, ultimately, was it the most important.

Before the revolution in Russia it was the dream of every peasant to own his own horse. It was hard to scrape together the money to buy one. The peasant economised in all things, sometimes denying himself the bare necessities. But he had no alternative. Without a horse a peasant could not till the land, could not gather a harvest.

Heavy industry was such a horse for the Soviet people. In order, for example, to build homes, there had to be cement, metal and machines, i.e. a developed heavy industry. In order to have efficient, adequate agriculture, we needed millions of tractors and harvester combines, fuel, chemical fertilisers, and so on. Without heavy industry an advance in living standards was unthinkable.

During the last five-year plan the Soviet Union attained a high economic level which for the first time in our history enabled us, in the words of L. Brezhnev, General Secretary of the Central Committee of the Communist Party of the Soviet Union, to cope well "with a big and complicated task" — that of combining three aims:

— continued high rates of economic development,

— reinforcement of the country's defences;

— a substantial raising of the people's well-being.

It is precisely the gigantic scale of the Soviet economy, attained thanks to all the preceding five-year plans (see article *Chronicle of the Five-Year Plans* in this issue of SPUTNIK), that has made it possible to set as the main task of the present plan the substantial raising of the people's material and cultural level.

The Twenty-Fourth Congress of the CPSU not only posed this task, it made it incumbent upon planning and economic agencies and Party, state and trade union organisations to adopt a new approach to the production of consumer goods. "... That which was explicable and natural in the past, when other tasks, other undertakings stood in the forefront, is unacceptable in the present conditions," L. Brezhnev emphasised in his report to the Congress.

Never in the whole 53 years of its existence has the Soviet government channelled such immense financial and material resources into the development of agriculture and of branches of industry linked with consumer goods production as in the current five-year plan. *Twice as much* is being allocated for light industrial development than in the preceding five-year plan.

The current plan, in particular, provides for:

— an almost one-third growth in real incomes of the population;

— maintenance of stable prices of foodstuffs, clothing, stable rents, fares, etc. and also price reductions for some goods;

— cash allowances for children where the income per family member does not exceed 50 roubles;

— the raising of minimum old-age pensions (with effect from July 1, 1971);

— the raising of student allowances;

— the raising of minimum wages;

— an increased allowances for meals in hospitals and urban vocational and technical schools;

— increases in the pay of teachers and doctors (by an average of 20 per cent), and an even bigger increase for teachers in pre-school establishments;

— a further reduction in payments for attendance at crêches and nursery schools;

— the construction of 565—575 million square metres of living space — approximately 16 million flats.

Social consumption funds, from which are paid student allowances and pensions, the cost of free holiday vouchers, etc., are playing a growing role. At present expenditure from these funds amounts to 262 roubles a year per person, and by 1975 the figure will rise to 367 roubles.

These are the plans. They are based on the vital interests of the people, on the country's real possibilities.

The Communist Party of the Soviet Union in Figures

The Communist Party of the Soviet Union has 14,455,321 members. This is 9 per cent of the adult population of the Soviet Union.

24th Congress of CPSU

The Party Defines Its Line

Setting a substantial rise of the standard of living as the main task of the Ninth Five-Year Plan, the Central Committee reckons that this will determine not only our activity for the coming five years, but also the general orientation of the country's economic development over the long term. In setting this course the Party proceeds primarily from the postulate that under socialism the fullest possible satisfaction of the people's material and cultural requirements is the supreme aim of social production.

L. BREZHNEV,
from the Report of the CPSU Central Committee to the 24th Congress of the Communist Party of the Soviet Union

The Twenty-Fourth Congress of the Communist Party of the Soviet Union took place in Moscow from March 30 to April 9. A total of 4,963 delegates gathered in the Kremlin Palace of Congresses, representing 14.5 million Communists.

The Congress delegates had been elected by secret ballot at regional and territorial Party conferences, and also at congresses of union republic Communist Parties. Workers accounted for nearly a quarter of the delegates — 1,195 of them. From villages and settlements in the countryside came 870 delegates.

For three-quarters of all the delegates it was their first time at an all-Union Party Congress.

L. Brezhnev, General Secretary of the Central Committee of the CPSU, gave the Report of the Central Committee to the Congress. The report on the draft Directives for the new, Ninth Five-Year Plan for the economic development of the USSR (1971-75) was delivered by A. Kosygin, Chairman of the Council of Ministers.

The draft Directives were published in the Soviet press six weeks before the Congress opened; they were discussed in all Party organisations, at meetings of workers and collective farmers, in

Leonid Brezhnev (centre) talks with delegates during an interval.
O. Ivanov, M. Kuleshov

Pilot-Cosmonauts Alexei Yeliseyev and Vladimir Shatalov (second and third from left) in the conference hall.
O. Ivanov, M. Kuleshov

The First Secretary of the Central Committee of the Vietnam Working People's Party, Le Zuan, expressing thanks to the CC of the CPSU, the Soviet Government and the entire Soviet people for their constant support and great help to the people of Vietnam.
O. Ivanov, M. Kuleshov

On March 30, 1971, the Twenty-Fourth Congress of the Communist Party of the Soviet Union opened in the Kremlin Palace of Congresses. Leonid Brezhnev, General Secretary of the Central Committee of the CPSU, addresses the delegates.

Novosti Press Agency

In the conference hall of the Kremlin Palace of Congresses.

O. Ivanov, M. Kuleshov

Congress delegates (left to right): M. Keldysh, President of the USSR Academy of Sciences, A. Kapitsa, head of the Far-Eastern Science Centre of the Academy, and N. Muskhelishvili, President of the Academy of Sciences of the Georgian Republic.

Y. Abramochkin, L. Ivanov

People of many different trades and professions came to the Congress. In the lobby (right to left): V. Artmane, People's Artiste of the USSR, M. Postnev, turner from Latvia, and M. Babenko, Ukrainian collective farmer.

V. Sobolev

Alexei Kosygin, Chairman of the USSR Council of Ministers, gives the report on the Directives for the five-year plan, 1971—75.

O. Ivanov, M. Kuleshov

Mikhail Sholokhov, the author, (left) chats with delegates.

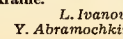
V. Sobolev

A. Smirnova, a weaver from the Yakovlevsky Linen Mills (Russian Federation), makes a contribution to discussion.

M. Kuleshov

The Congress delegates, Vera Ilchuk (left), who works at the Barnaul Chemical Fibres Plant in Siberia, and Sofia Verbitskaya, from the Kiev Chemical Fibres Plant in the Ukraine.

L. Ivanov, Y. Abramochkin



Display stands in the streets exhibited photographs taken at the Congress. This one is in Sverdlov Square, Moscow.

V. Kuchin

The Congress proceedings aroused great interest among the Soviet people. At a newspaper kiosk in Moscow.

N. Korsak

the press and on television. A host of letters expressing criticism and suggestions or proposing additions were sent to the Central Committee and to the Congress.

A wide discussion took place at the Congress itself. Speakers included delegates from all the union republics, and from big industrial and agricultural areas of the country. Workers, collective farmers, heads of enterprises, scientists, ministers, Party and trade union officials put forward their views on questions of Party and socialist democracy and the economic, social and cultural development of the country. Many of the comments and proposals were reflected in the Congress decisions and the Directives, while others will be taken into consideration in the course of carrying out the five-year plan.

The Congress unanimously approved the Report of the Central Committee, the political line of the Committee and its practical activity in the leadership of the country. It adopted the Directives for the new five-year plan for economic development in 1971-75, the main task of which is to bring about a substantial growth in the material and cultural standards of the Soviet people.

Of This and That...

NEWS FROM THE SOVIET UNION

Giant Blast Furnace

In spring this year the biggest blast furnace in the Soviet Union was put into operation in the town of Novokuznetsk (West Siberia). It has a capacity of 3,000 cubic metres, and is fitted with a great deal of automatic and electronic equipment. It gives metal almost continuously — 18 times in 24 hours, and can produce 7,000 tons of pig iron a day; in one year it will smelt more than two million tons

In pig iron production the USSR has overtaken the USA and now leads the world.

One in Four

On an average 75—76 thousand book titles are published each year in the Soviet Union, with a total print of 1.3—1.4 thousand million and in 89 languages of the USSR and 56 foreign languages According to UNESCO statistics, of all the books published in the world one in four comes from the Soviet Union

140 Kilometres Beneath Moscow

Moscow now has its 89th Metro station — "Ploshchad Nogina" (Nogin Square). Here two radial lines from big new residential ares in the south-east and south-west of the city meet. Now Moscow has almost 140 kilometres (87.5 miles) of underground railway lines.

Maximum Comfort in a Minibus

The Moscow Likhachov Motor Works is now building the ZIL-119, a comfortable 17-seater minibus which develops a speed of up to 75 mph. Aboard it, an air-conditioner maintains the desired temperature at any time of the year. The bus is equipped with TV and can be used as a fixed-route taxi, a tourist car or a sightseeing coach.

Socialist Integration in Action

The Bulgarian Ministry of the Chemical and Metallurgical Industries has approved the construction of a USSR-Bulgaria gas pipeline, which will be completed and ready for use by the end of the current five-year plan (1971-75). Through it 3,000 million cubic metres of gas will flow from the USSR to Bulgaria every year to provide fuel for big chemical enterprises. Soviet and Bulgarian workers and engineers are already on the job.

* * *

Soviet and Hungarian experts have designed a new radio relay line, "Druzhba", and brought it into operation. Its range amounts to one-third of the distance round the Earth. On each of its six channels it is possible to transmit black-and-white and colour television programmes and information for computing centres and at the same time conduct about 2,000 telephone conversations. Communications will be possible between the remotest parts of the two countries

CHRONICLE OF THE...
Continued from p. 36

of industry (with overall management and coordination being retained by central state agencies) and a strengthening of people's material interest in improving various elements of the socialist economy.

A lively controversy raged in the Soviet press around the essence of the reform. Measures worked out were put to the test on an experimental basis in plants, factories, large motor vehicle depots, and also in some ministries and departments.

All these discussions and experimentals were concerned, in the final count, with the improvement of socialist planning, the ability to produce forecasts on a scientific basis.

No one would dream of saying that it was a simple, easy matter for the people to carry out the vast undertakings of the eight five-year plans. But the Soviet people always remembered that ultimately the production of metal and machines, and the cultivation of millions of acres of virgin lands were all in the interests and for the good of man.

Let us stop and look around for a moment. What was the level achieved by the Soviet Union by the beginning of the Ninth Five-Year Plan?

Ninth Five-Year Plan

In April this year the Twenty-Fourth Congress of the CPSU adopted the Directives for the country's economic plan for 1971-75. The *main* task of the five years is to bring about a sharp rise in the material and cultural standards of the people. Real incomes of the people are to increase by 30 per cent during the plan period.

At the same time the prices of staple commodities and foodstuffs, rent, fares (on municipal transport and over long distances), and other indices of "everyday life", will remain stable. So income growth is accompanied by unchanging prices.

Greater quantities of consumer goods are becoming available, and of better quality. In this connection, planning agencies envisage an increase of 50 per cent in trade turnover during the five years. The sphere covered by services is to be extended, and new canteens, cafes and restaurants are to be opened.

Between 1971 and 1975 it is proposed to build homes for 16 million families. Production of the means of production is to grow by 41—45 per cent, and production of consumer goods by 44—48 per cent.

As A. Kosygin, Chairman of the USSR Council of Ministers, said in his report to the Twenty-Fourth Congress of the CPSU: "Socialism, for the first time in history, is transforming the wealth of society into wealth for all members of society."

WOMAN SCIENTIST HEADS FARM

by Anatoli GLAZOV and Ada VOLODINA

from the magazine RABOTNITSA

Olga Derevyanko conducts an experiment.

Olga Derevyanko is assistant chairman for research on the **Strana Sovietov** specialised collective farm. In an institute or a plant, research is common but on a farm? In the past, scientists came to the farm. They did research and gave assistance but always returned to their institutes eventually. Collective farms provided facilities for experiments but were not their permanent place of work.

What has made a scientist's work on the collective farm an integral part of farm production?

Above all, the farm itself has changed. The **Strana Sovietov** farm has become specialised. Olga Derevyanko has the following to say about the changes:

"A specialised farm is an agricultural cooperative specialising in one thing, say, sheep-breeding, like ours. Why are such farms required now?

"In recent times several new industrial areas have arisen in the Soviet Union. The industrial population has swelled. The demand for agricultural products is steadily increasing. Today intensification of farm production is the only way to increase output.

"We livestock-breeders realise that raising the productivity of livestock means raising the productivity of labour. That can be achieved only with the help of machines, a whole complex of mechanisms. But on small farms machines are unprofitable. Consequently, it is essential to build larger, specialised farms. Each farm, depending on its natural and economic conditions, has chosen its specialisation. In our Belgorod region, for instance, one such farm concentrates on milk; another on chickens; a third, pork; and ours, sheep. The possibilities opened up by specialisation justify all the effort.

"In every way — in scope, amount of machinery, character of work — the specialised farm

can follow industrial practice. Take our farm. We keep about 20,000 sheep — 158 head per 250 acres of land. Two of our large livestock-breeding complexes have been built to new standard designs which conform to all the requirements of modern veterinary science. Every facility is provided, so the work goes fast. No wonder that in such a complex one worker can handle 500 sheep, instead of 250, as before, or even 700, if they are young.

"Like any industry, we work on a shift system, seven hours a day.

"Together with machines, science has come to the farm.

"The first thing we had to do was work on the breeding. The sheep bought before were a motley collection of various types. The farm bought pedigree sheep, with smooth long wool. Artificial insemination is gradually helping us to change the composition of the flock. The job is far from completed but our sheep already yield twice as much wool as before, and of better quality — that is noted by the textile-workers who process it. The results of research are as a rule utilized in production. Here is just one example.

"On a huge farm like this there are hundreds of lambs who, for a variety of reasons, cannot be fed by their mothers. We devised special fodder for such lambs and tried it out. We discovered that they can survive in this manner. This opens the way for major industrialisation: we are thinking of building special sheepfolds for all lambs taken from their mothers."

Olga Derevyanko confessed that after she earned her Master's Degree at the Moscow Timiryazev Agricultural Academy, she dreamed of research work in some big city. After she has been invited to work on the specialised collective farm **Strana Sovietov**, she had doubts as to whether she would have proper conditions for research there. After all, the collective farm is not an institute and its top priority is the production plan.

"Happily," she says, "I soon realised my apprehensions were unfounded."

The word "experiment" on this farm is now used on an equal footing with such words as "plan" and "deliveries" — an indication of the high level of farming, as is the job itself of "assistant chairman for research". When Olga Derevyanko talks about her work, one is sometimes unsure whether she is talking about a collective farm or an institute. The words "lecture", "seminar", "consultation" keep cropping up...

"I should say it really is a kind of training institution," she laughed. "Everyone studies on our farm, from the chairman (Alexander Kryuchkov is in his final year at Kharkov University) to the shepherd, because at an industrial enterprise which produces mutton and wool it is as

important to know and observe the rules of the production process as it is in a chemical plant or in a weaving factory. That is why everyone — especially the younger generation — so readily attends lectures and seminars and many farm workers study by correspondence.

"The farm employs thirty vets and livestock experts. We keep a close eye on scientific publications. The moment someone learns about some innovation that could be applied here, we call the Farm Experts Council together and discuss how it could be done, what it would mean to the farm, what it would cost... The Council is another innovation and also proves how much the level of knowledge has risen in rural areas. In general, the whole life in the countryside has changed. I always notice these changes. Last spring, walking through the USSR Economic Exhibition in Moscow, I noticed a stand with a caption saying 'Tysyachny Model Urban-Type Farm'. I took a special trip out to see it. It really was a model farm, complete with a ten-year school, hotel, shopping centre, a big club, an excellent road and a bus service.

"But our farm is quite as good. Cottages with all modern conveniences are financed and built by the farm and provided to its members. We have a big club and a kindergarten which functions all year round, not just on a seasonal basis.

Our specialised farm is most profitable. We produce 67 tons of wool — twice as much as the whole district used to produce.

"And our farm has great prospects!" she said with conviction.

Who of all people should know it if not Olga Derevyanko — assistant chairman for research on her farm?

SWALLOWS TO THE RESCUE

A herd of cows, which had been calmly grazing in a field of a collective farm in the Astrakhan region, suddenly seemed to go berserk. They pawed the earth, bellowed, swished their tails in a frenzy, dashed about in all directions. It turned out that a cloud of midges had attacked the herd.

At that moment a flock of swallows appeared on the scene. They behaved like skilled fighter pilots — diving, wheeling away and diving again. After about 15 minutes the midges were dispersed, the satisfied swallows perched on electric transmission lines and the cows resumed their grazing.

From the newspaper KOMMUNIST TAJIKISTANA

People of a Ukrainian Plant

by Vitali KARPENKO
from the magazine UKRAINA

"My workmates and I," recalls Nikolai Tsurkan (centre), "got down to thinking about how to make more economical use of our labour, about the reserve potentials we had and how they could be used. The first possibility was to distribute working time more efficiently. The second, to organise the actual work process correctly, for example, to position the machinery and equipment more conveniently. Everything's important in our work: intelligent preparation of the work-place—no clutter, and everything at hand, and also something Anatoli Grechka (left), Vassili Larkin (right) and I managed to achieve, that is the highest labour classification—sixth grade. This is what gives a worker confidence in himself and power over his machine. Each day our team turns out 50—60 per cent above the quota, which means that we get average monthly earnings of 220 roubles each". The success of the innovations introduced by such teams as Tsurkan's are important not only to the team, the shop, or even the factory—they are vital to the state. It is planned to raise the output of the machine-building industry 10—11 times over by 1980 in the country as a whole, and this means that labour productivity must be raised substantially. One way of doing this is for one worker to operate more than one machine, and in this sense Tsurkan's team can be regarded as a team of the future.

A squat machine, which bore a vague resemblance to an overgrown turtle, moved slowly forward, and out of its flat belly a wide black ribbon of still-warm asphalt rolled smoothly out. The process was watched by Anatoli Kozlovsky, a Soviet engineer, somewhere in Sweden.

That was not the first time he had watched an asphalt-surfacing machine at work. As a matter of fact, he himself had had something to do with the designing of it and each time he noted with satisfaction that it handled 100 tons of asphalt an hour! Three 10-ton tip-up lorries could barely keep up with the machine's insatiable greed for the hot mass. Were the Swedes satisfied? he wondered.

The engineer glanced at their faces: the operator of the machine looked serious and concentrated, the representative of the firm wore a cold, inscrutable look, and the reporters were busy with their cameras.

Noticing some uncertainty in the movements of the operator, Kozlovsky told him to stop, and wanted to help but the representative objected:

"No, not now. Afterwards."

He's right, after all, thought Kozlovsky. Who'll help them when I leave? I've done my job: the machine has been tested and the workers have mastered the instructions. Everything's going well. The lorry drivers don't have a minute's respite and the machine is running smoothly.

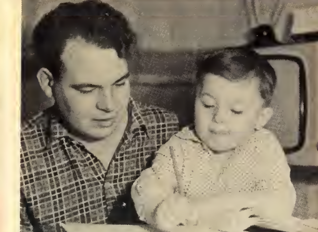
"We're satisfied," the firm's representative said to him. "The machine's O.K.."

The Plant's Calling Card

Just back from Sweden, Kozlovsky showed me over the Nikolayev Road-Building Machine Plant.

"Our gross annual output is estimated at 20 million roubles. We have won several awards: two grand silver medals at the USSR National Economic Exhibition and a grand gold medal for a 10-cubic-metre hydraulically-operated scraper at the 1958 World Fair in Brussels. For a set of machinery for surfacing roads with concrete, a group of our workers received the USSR State Prize. Our machines are being used in almost 30 countries in Europe, Asia, Africa and America. Of the 1,900 workers employed in our

Vladimir Baranovsky: "I love to work with the youngsters, it does me good to see an unskilled lad develop into a high-class worker. At the moment I have two trainees. One is Sasha Lutsky, who's very young indeed, and I think I'll have to take a lot of trouble over him. He's a happy-go-lucky type, but I can see there's something there. Take a look at our shop—it's clean and light, with bright plastic everywhere, and flowers. Sasha's added an improvement. He's not a bad artist, and he's done some very attractive murals for us. I think that's a good sign. Would a youngster give up his spare time like that if he wasn't fond of the shop, of the factory? I think he'll eventually become more serious and self-exacting. My second trainee, Lyonya Pavlishin (shown in photograph) is older than Sasha. He's a splendid boy, bright, quick to grasp things, and with the hands of a real worker. It's easy to teach him anything, just a pleasure: he knows quite a bit, and has had ten years' schooling. Almost all our new entrants have secondary education, by the way. Many of them have already entered secondary technical schools or institutes or are preparing to do so. Just listen to them—they're abreast of all the political events of the day, they read a lot, have interesting ideas on art, and go in for sport."



**Nikolai Tsurkan is an energetic man, but he is not a fast talker and speaks only briefly about his life.
After leaving secondary school he entered a two-year school of building and then at the request of the Komsomol (Young Communist League), he went off to the Altai, to work on an all-youth construction site, to which youngsters from many republics had come. When building work was finished there he returned to Nikolayev, where he started at the Works as a trainee gear-cutter. After a while he did his army service, and then went back to his lathe. Before long his workmates elected him team leader—he knew the value of words and of time, and was thoroughly responsible and businesslike.
Tsurkan, now 26, is in his fourth year at technical secondary school, in the Building Machinery and Equipment Department. He is a family man and has a son, Seryozha, who is four.
In another year, Nikolai will get his diploma, but he does not intend to change his job. Nor is he an exception. At our big factories today there are many experts with secondary technical and even higher education who prefer to stay on as workers. They are justified—in order to be a worker in a modern factory, especially when there is complex machinery to contend with, a man needs a good knowledge of technology, machine tools and production in general.**

plant, about 700 have higher, general or specialised secondary education and another 150 are spare-time students. Good education is the guarantee that we shall constantly get new good technical ideas advanced by our people on a mass scale. In 1970, according to plant statistics, 13 per cent of our workers made suggestions for improvements in production. We have put into effect 228 innovations, saving the state around 100,000 roubles."

These figures tell a lot, but not everything. At the plant I met and talked to many workers. But I will discuss only two of them. They are quite different: one is a veteran at the plant, an old communist, Vladimir Baranovsky, and the other is a young innovator and a candidate member of the Soviet Communist Party, Nikolai Tsurkan. But such people make the working force of this plant what it is.

The Veteran

Each morning, hurrying past the plant's control post, a grey-haired man involuntarily slows his pace near a slender, granite obelisk and halts for a moment at the soldier's helmet cast in copper. It is a monument to his fellow-workers, his contemporaries who failed to return from the last war.

Vladimir Baranovsky started working in the plant almost half a century ago. At the time the plant produced ploughs. The village lad became a hammerman and a smith. When the plant began to produce road-building machines, skilled workers were required. Baranovsky learned the trade of model-maker and became one of the plant's best workers. When the Great Patriotic War broke out the plant's production became vital and Baranovsky was exempted from military service. But he volunteered for the front in any case. Reminders of that time are his wounds, which ache in bad weather, and his military decorations. The enemy bullets did not kill him, but many of his former fellow-workers never returned.

Today Baranovsky is 67. He receives a good pension and could well retire. However, every morning he hurries off to his job. Most of his life has been spent in the plant and he still feels that his services are essential — his experience and know-how are invaluable to young workers. It is a great honour for a young worker to be attached to Baranovsky for training. Of course, all young workers at the plant have equal working conditions, but somehow the fellows in Baranovsky's team enjoy the reflected fame of their teacher, the plant's oldest worker. "A pupil of Baranovsky" is a mark at distinction.

Arithmetic of an Innovator

The section in which Nikolai Tsurkan is employed consists of two rows of 11 machine-tools operated by three workers.

Anatoli Kozlovsky has demonstrated the goods produced by his Plant at international exhibitions in the German Democratic Republic and Turkey. Experts in many countries have a high opinion of Ukrainian machines, above all because they are strongly built, are long-lived, and reliable in operation.

Kozlovsky told me that at one time there were four machines which were operated by eight workers. Today Tsurkan's team of three produces enough gears for the whole plant and labour productivity in his section has risen by 12 per cent. The credit for this belongs to Tsurkan.

I visited Nikolai in his home after the working day was over. He lives in a new district of the city. One of the rooms in his flat is set aside for a study. In it there is a draughtsman's desk which he designed himself. On it there is a case of draughtsman's instruments, pencils, a bottle of Indian ink, a heap of textbooks and journals — everything a correspondence student is supposed to have at hand.

"You see," he said, trying to explain the fine points of his invention, "strictly speaking, we did not invent anything new. Using elementary arithmetic, we changed the order of the work we do. Most important, we made accurate calculations so that now the machining periods overlap. Without any fuss, we have to go from one machine to another only to fix the stocks and remove the parts."

I admired his ability to juggle with so many calculations. Nikolai's team manufactures over 100 types of gear ranging from a few centimetres to half a metre in diameter. Limited quantities of each type are produced, so the three workers have to reset their machines four or five times in

one shift. Besides being a gear-cutter operator, the worker has to be a setter and even something of a production engineer.

Once "creative work" meant the work of a writer, scientist or artist, but not an industrial worker. But who would contest Tsurkan's right to call his work creative?

Machines of Tomorrow

In the manager's office I was shown draft plans for the next five-year period. Improved road-building machines were given top priority. Asphalt surfacing machines on a wheeled chassis, with a throughput of 100 and even 200 tons an hour, are already on the drawing-board, and the concrete-laying machine is to be put on caterpillar treads. Over the next five years the plant expects to modernise and put into production the manufacture of another 15 types of machines.

I took a last stroll through the plant. Freshly-painted asphalt-surfacing machines stood ready in a silent row. Soon they will spring to life, laying new roads at far-off sites.

Mila Golberg and Valya Bogomolova, technologists, Seryozha Panin, foreman in the repair shop, and Gena Bogomolov, all came to the Plant immediately they left ten-year school; the girls will soon be entering the Nikolayev Ship-building Institute, while the boys are a little behind—tbey bave been held up by their army service. Seryozha is now studying at a secondary technical school, while Gena got one too few marks in the entrance examination for the institute, but plans to bave another go next time. Today at a table in the café, however, tbe talk is not of studies and work, the conversation is both gay and serious at the same time. They are in fact discussing the forthcoming wedding of Mila and Seryozha (centre picture). Valya and Gena, as old bands—they've been married for two moths—are giving advice. There's the problem of the day—a mini or a maxi for the bride? And the eternal questions of where to have the reception, and where to live—with Mila's mother, as the bride would like, or absolutely independently, as Seryozha prefers.

SAUNA BATH IN A SUITCASE

by Alexander MASSARSKY
from the magazine NAUKA I ZHIZN

It is not so much a steam-bath. It is a mini-chamber for physio-therapeutic treatments where excess weight can be taken off and a multitude of ailments helped. The designer of the mini-sauna, Alexander Massarsky, a Leningrad engineer who is also a Merited Sports Coach of the Russian Federation, specialising in sambo (unarmed self-defence) discusses details.

For several years I have watched athletes trying to rid themselves of excess weight. I thought to myself how useful it would be to design a portable thermal chamber that would act upon the organism in the same manner as the sauna, a dry heat bath chamber used in Finland. Now this idea has been brought to fruition, and the new mini-steam-bath is in many ways superior to the sauna.

It is common knowledge that the lower the air humidity the easier it is to bear heat. The less steam there is in the air, the quicker the perspiration is evaporated. That is why the sauna, producing air humidity of only 10 to 30 per cent, is borne comparatively easily, even though the air temperature reaches 100 to 130 degrees Centigrade. At any rate, the sauna works upon the organism better than the Russian steam-bath, with its 100 per cent humidity at an air temperature around 50 to 60 degrees. The point is that when the air is full of steam perspiration scarcely evaporates. It trickles down the body in hot streams, scalding the skin — something that never happens in the sauna.

However, the sauna has its own shortcomings. Man inhales very hot air, which burns his lungs.

My portable thermal chamber rules out these drawbacks. The humidity is minimal and the temperature reaches 130 degrees. But whatever the air temperature within the chamber, a person has no trouble breathing: his head remains outside and he breathes the air which surrounds the mini-sauna and himself.

Tests show that this thermal chamber intensifies metabolic processes and with them the oxidation of fats, consequently diminishing fatty deposits. Moreover, the mini-sauna helps polyarthritis, sciatica, myositis, kidney troubles, pulled muscles and other injuries.

This has been confirmed in reports made by the Central Research Institute of Health Resort Treatment and Physiotherapy and other Soviet medical institutions. The government body which registers inventions and discoveries issued me certificate No. 237,337 for one version of this mini-sauna. What is it like and how does it work?

It can be folded up to form a comparatively small suitcase, 70×50×18 centimetres. On the bottom there is a folding seat and an inflatable tent. On the tent's sides there are zippers, opening from both inside and outside. The chamber is sealed sufficiently to hold the heat and evaporation inside the tent. At the same time it does not hinder arm movements to adjust the regulators. The arms can be kept outside the tent in order, for instance, to read a newspaper.

In its base the chamber has an electric fan with three 200-watt heaters. The voltage is safe — 36 volts. The temperature inside

the chamber is easily regulated from the control panel: the more heaters are switched on, the higher the temperature, which is registered on a thermometer. On the other hand, the more powerful the air flow coming to the chamber from the outside, the less hot it is.

One of the most important features of the mini-sauna is its dry heat. The chamber is therefore fitted with dehumidifiers. Meanwhile, the light breeze produced by the ventilation makes for higher moisture evaporation from the skin. All this creates a sensation of complete bodily comfort.

The mini-sauna, designed especially with sportsmen in mind, enables you to combine what is good for you with what is pleasant. While taking a sauna bath you may read, write, or chat with the doctor or the trainer.

Other equipment can be connected to the chamber. For instance, a vibro-massage device for treatment of sprains and pulled muscles or a sun-ray lamp for a tan and for healing skin diseases.

The hose through which the hot air flows can be drawn outside, in which case an ordinary heater fan is created, which can be used to dry hair, plaster casts or even film.

A 30-minute period in the thermal chamber will reduce weight by three or four pounds without causing any functional disorders. The treatment has no ill effect even on those who suffer from cardiovascular diseases. For athletes the use of this chamber represents a unique method of losing weight, helps to restore muscular tone and removes nervous strain brought on by competition.

The mini-sauna is tolerated much easier than any steam-bath or physiotherapy in a clinic largely because distractions are available while taking the treatment. A person can watch the training of fellow-sportsmen in a gym or on television, or read a book or talk to friends.

Naturally, the use of the mini-sauna requires consultation with a doctor and the recommendation of a specialist.

In the land of youth

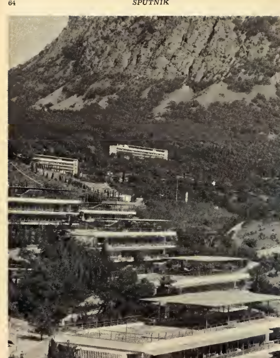
by Gennadi SIBIRTSEV
Exclusive to SPUTNIK

Neptune, Mermaids and Pirates

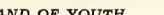
Where would you see a live King Neptune, his young daughters the mermaids, and a gang of pirates with curved sabres in their hands and flintlocks in their belts, growling out a wild song about "The Black Roger"? In a children's theatre? But this was not a theatre with an artificial sun and blue sea painted on canvas.

A real, hot southern sun shone in the sky and, almost rippling along on the sea, coming towards the shore was — no, not a caravel in full sail — just a ship's boat. But aboard it, dancing and brandishing daggers and sabres, was a crowd of pirates. With them they had captives, bound with thick ship's cable — mermaids with long, flowing green hair. Having landed, the pirates, like true freebooters returning with a rich prize, set about feasting.

But their revels did not go on for long. Neptune arose from the briny deeps with his faithful lieutenants, the knights from Pushkin's "Tale of Tsar Saltan" and gave short shrift to the pirates, who with agonised shouts of "We won't do it again", vanished like the wind. As a sign gratitude to Neptune, the mer-



Early morning at the Morskoi Camp.



maids, released from bondage, gracefully performed a joyful dance.

Their audience, hundreds of boys and girls, joined in, wildly expressing their delight, right by the edge of the water. On their bronzed bodies they wore only swimsuits — just as it should be on the beach, for this was the beach of the Morskoi Young Pioneer camp, and the spectacle I watched with them was the opening of the Neptune Festival.

Neptune, who was wearing a seaweed beard down to his feet

Reveille!

and a golden crown on his head, towered over the scene, sitting on a throne with a trident in his hand. Just then he sounded his horn, calling for silence. First of all, he asked whether the order he had issued some time earlier had been carried out. Under this, everyone who could not swim had to learn by the day of the Festival.

"Yes!" came a great chorus of voices.

"All right. Later on I'll see for myself", said the monarch of the sea. "And now tell me who's

climbed Mount Ayu-Dag."

It seemed that most of them had.

"And who was afraid to sleep by the campfire at night when you went on a camping trip?"

No one, it appeared.

After that Neptune went through the complaints and meted out punishments to the culprits. Both complaints and punishments, like everything else that day, were a very jolly business, like a game in which everyone took part.

The Neptune Festival finished

The Neptune Festival in full swing.

They made friends at Artek.

with swimming competitions. There were serious ones in which the winner was decided with the aid of a stopwatch, and a more light-hearted variety, including a kind of egg-and-spoon race with table tennis balls for eggs. A droped ball knocked a swimmer out of the competition.

Later on I heard that the Neptune Festival was one of the traditions of the Artek Young Pioneer Camp. It is interesting to note that the children themselves write the scenario for the occasion each time, they make the

costumes and the properties themselves, and perform all the roles.

What Is Artek?

In my story about the festival by the sea I used two words: "Morskoi" and "Artek". It's time to explain. But first let me turn to the **Guide to the South Coast of the Crimea**. It says: "The warm, mild climate, the abundance of sunny days, the beauty of the mountains and valleys

It's terribly hard to tear yourself from the beach on a fine day like this.

along the coast, and the luxuriant subtropical vegetation has made this area famous as the finest resort zone in the USSR."

This is where Artek is — an all-Union Young Pioneer Camp, the biggest of its kind in the Soviet Union. It covers an area stretching along the Black Sea coast from Mount Ayu-Dag to the resort of Gurzuf, nearly five miles long. On this territory there are, in fact, five camps, one of them being the Morskoi camp referred to earlier. Each has its own dormitory blocks, canteens, medical posts, beaches, and sports pitches. Add to that a Pioneer Palace with a concert hall, a museum, and a library with 100,000 books, a school block (children who come in term-time continue with their lessons), a Young Technicians' Station and, finally a stadium with seats for 10,000, and now the picture of Artek is more or less complete.

"You must visit our museum," I was advised when I arrived at Artek. The "museum" turned out to be a large room with a host of photographs on the wall and ten display cases. But there was a tremendous amount of in-

The pilot's costume this holiday-maker is wearing is the real thing—only not full size. The plane that can be seen in the picture is also real, and is an exhibit at the Young Cosmonauts' Club, for it no longer flies. This club was opened on the initiative and with the direct help of Yuri Gagarin.

"Is it a bite or not?"

teresting information here. Take one old photograph: amidst thick greenery by the sea there were four tents, and nearby stood a deal table and long benches beneath an awning. That was how Artek began in 1925, when 80 Moscow schoolchildren spent two summer months here. Now Artek has grown to the extent that it accommodates 27,000 children from all over the country every year.

There is also a colourful map showing both hemispheres. Fanning out from the Crimean Peninsula are thin lines to all parts of the world — to Europe, Asia, Africa, North and South America, and Australia. These are Artek's international contacts. Soon after the Second World War, children from abroad began to come to Artek. In the last twenty years more then 12,000 children from 105 countries have spent summer holidays here.

By the side of the map is material evidence of the fruitful international contacts of Artek — a Certificate of Honour from the World Council of Peace and the gold "Fighter for Peace" medal of the Soviet Peace Committee.

Two fat albums contain the autographs of honoured guests who have visited Artek. Among them have been Mikhail Kalinin, Kliment Voroshilov, Maurice Thorez, Palmiro Togliatti, Walter

When a new batch of children arrive at the camp there is always a traditional Pioneer assembly in the stadium.

Ulbricht, Jawaharlal Nehru, Indira Gandhi, and well-known Soviet and foreign writers, composers and cosmonauts.

"Artek is a real Paradise, but an existing, earthly one, where the children spend their time building up their physical strength, acquiring knowledge and engaging in sport." This was

what Henri Barbusse wrote after visiting this camp by the Black Sea at the end of the twenties. Anyone who has spent even a few hours there cannot help agreeing.

I was at Artek for several days, and although it was a comparatively short period it provided impressions enough for a book. But here I shall confine myself to giving a brief account of what happened on just another day at the Morskoi camp.

An Ordinary Day

It began at seven o'clock as usual, when the silence was shattered by the silver strains of the Young Pioneer bugles sounding "Reveille". The children spilt out like peas from the pod onto the square in front of the dormitory blocks, and then it was "One, two! One, two! Trunk bend..." That was the daily dozen. After that they washed and breakfasted.

When the sea was calm, the children usually went to the beach after breakfast, but this time they had to get by without their swim. In the night there had been a bit of a storm, which had died down by morning. There was scarcely a cloud to be seen, but the waves were mounting higher and higher. Well, so one could go fishing from the jetty — it's supposed to be the best time after a storm. That was what two of the boys plumped for, anyway. One of them was a fair-haired, blue-eyed, sturdy youngster, and the other was the exact opposite — lean, and with great black eyes. It was Mitya Morozov and his pal Bagautdin Abdurahmanov.

"May we have permission to go fishing, please?" they asked a girl with a Young Pioneer leader badge pinned to her blouse.

They asked, because what they were proposing was not part of the strictly observed order of the day, and discipline is discipline at Artek. But the idea is not to cramp initiative, as I could see for myself at every step.

Olga Mazo, the Young Pioneer leader, did not object, and a whole group of boys with rods and lines in hand set off for the jetty.

"We're going to the park to get some specimens for our herbarium," announced several girls, clustering around Olga Mazo. Another group of girls had changed out of their everyday costume (they have a parade uniform, too) into white shirts, dark blue shorts, and little white sun hats, and were off to the volleyball court. In a few days there was to be a match against the neighbouring camp, Pribrezhny, and there was some stiff training to put in so that they wouldn't let the side down.

Before ten minutes was up everybody had found some occupation that really appealed to them.

There was a brief lull, and I took advantage of it to talk to Olga. Twenty-five, she was working at Artek for the second year,

having come there straight from the Kiev Teachers' Training College ("Most of our Young Pioneer leaders have been to teachers' training college," she explained). Did she like it here, I asked. Very much. The children didn't leave one a minute's peace, she said, but that was a good thing. And then every one of them was different.

Take those young fishermen. Mitya was Russian, son of an office worker on Sakhalin, while Bagautdin was from Daghestan, a shepherd's son. As for the girls who had gone to collect plants, Galya Shniper was Jewish, daughter of a teacher in Novosibirsk, Lyuda Fase was a Mordvin — her father was a factory worker, while Khairi Kudbidinova was a Tajik, and her mother, a Dushambe weaver. "You see," she said, "it's a real International."

After dinner — they had self-service canteens, taking turns at clearing the tables — Morskoi slept the sleep of the just. Every afternoon, in the heat of the day, the youngsters have a two-hour siesta, after which they resume their energetic pursuits.

Fans crowded round the table-tennis tables by the open-air swimming pool, reacting exuberantly to every good stroke. By contrast, on the flat roof of one of the dormitories everything was in subdued key. Budding artists were at work on a magni-

A campfire on the sea shore is also romantic and unforgettable.

We like dancing . . .

. . . music, and designing model rockets.

ficent view — the bay, with cliffs rising sheer from the water. After a while the table-tennis enthusiasts went off to the "Hundred Pastimes Club", perhaps to rack their brains over some technical teaser, to assemble ingenious machines from meccano sets, or to play chess.

The Young Technicians' Station was particularly popular that day, in some rooms youngsters were busily sawing, planing, or glueing, in others girls were cutting out or embroidering.

In the model shipbuilding room, Slava Ilugin, a schoolboy from Chuvashia, was fixing a radio aerial to the mast of a five-foot-long model.

"The boat's controlled by radio," he explained. "I've already launched it once, but there's something not quite right with the radio."

On other benches I saw liners, submarines and frigates with snow-white sails taking shape.

Next door some of the girls were having a needlework lesson, learning to embroider new stitches, do appliqué, and even cut out a dress. They showed me their work with considerable pride.

I did not get away from the Young Technicians' Station until supper time — everything was so fascinating. I saw model aeroplanes that really flew, little ornaments and other souvenirs made from wood or plastic, and albums of excellent photographs, and a hundred and one other things — all the work of the youngsters of Artek. I even saw a film made in the Artek film studio by keen young cameramen, directors, etc. — they have their own cine-cameras, developing and printing laboratory, and all the necessary lighting apparatus and equipment for cutting.

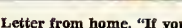
In the evening there was dancing and singing — in the avenues in the grounds, by the sea, on the balconies of the dormitories. There the Russian Birch-tree Dance, the Ukrainian Gopak, the fiery Lezghinka from the Caucasus, and slow, graceful Estonian dances were performed.

So it went on until 10 o'clock, when the bugle went again for bed.

Two Interviews—or One, and Some Notes from a Diary

"From the exhibits in our museum and your own impressions you can already see that Artek has grown tremendously in the 45 years of its existence," Yevgeni Rybinsky, director of Artek, remarked. "We're still developing and extending. Here are a few figures from our long-term plans, which have been worked out by state bodies.

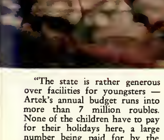
"In the next few years the Lazurny and the Kiparisny camps are to be reconstructed and enlarged, so that each of them will have accommodation for 1,200,



Letter from home. "If you like, I'll read it out loud."

instead of 1,000 as at present. A new camp — Vozdushny, for 1,200 children, is to be built, and also a gymnasium and a covered swimming pool, and a second cinema-cum-concert hall seating 1,200.

It's quite a problem finding just the right spot for the young cameraman—there are so many places at Artek crying out to be filmed.



"The state is rather generous over facilities for youngsters — Artek's annual budget runs into more than 7 million roubles. None of the children have to pay for their holidays here, a large number being paid for by the

state and the remainder by the trade unions."

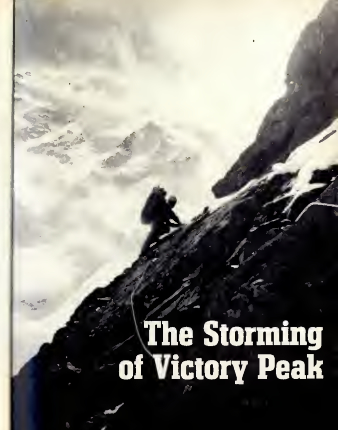
My other interview was not exactly an interview, and was not at all of an official character. I was asking Olga Mazo, the Young Pioneer leader of the Morskoi camp, a few questions about life in the camp, and in reply she brought out her diary. Some of the entries were brief, some longer, there were facts, observations and reflections. Here are some extracts, published with Olga's permission:

"I put a questionnaire to the Young Pioneers in my detachment with questions like 'what would you like to learn at Artek,' and 'would you like to teach your friends here anything.' Not all of them answered the first question, but everyone replied to the second. One of them wanted to teach others to play the guitar, another chess, one of the girls was willing to show the rest how to knit a jumper, another wanted to explain how to go about getting a collection of minerals together, and so on. I know from my own experience — although I haven't much — that they can teach something to others if only they want to. All my kids are different, but they're all good-hearted and generous."

"Yesterday my detachment went on a trip to Sevastopol. I've been there several times before, but always find this hero-city very moving. We spent the whole day there, walked about a lot, looking at places where the city's defenders won glory during the Second World War. The expression on all the children's faces was so intent and serious that they seemed to be making an inward vow to be worthy of all those who died to make it possible for them to have such a happy childhood."

"We went off on a long hike and camped for the night in a most beautiful place — Ai-Danil. I'd got the impression, somehow, that Ira Zhukova was rather frail and delicate. Nothing of the sort. She could do everything just as well as the boys. And if someone had the cheek to say: Call this tea? (somebody did) she'd retort: 'A thousand times better than at home!' How everyone laughed when they were catching crabs! In the evening we switched on the transistor, listened to music, looked at the stars and sang songs and dreamed dreams. The sea, the sparks rising from the campfire, the singing — it was unforgetable. It's very important to be able to dream, and know that around you there are good friends. Artek remains a memory of youth for one's whole life!"

Artek is often called "The Young Pioneers' Republic". I prefer another name — Land of Youth.



The Storming of Victory Peak

Victory Peak (7,439 metres) is one of the highest peaks in the Kokshaal-Tau Ridge in the central part of the Tien Shan Mountains. For a substantial part of the year the summit is swathed in clouds, and there is no convenient approach. This is the most northerly peak in the world over 7,000 metres in height.

The first to climb the peak — it was as yet unnamed — were three mountaineers, Sidorenko, Ivanov and Gutman, who did it in 1938 out of sheer obstinacy, at a time when it appeared to be completely inaccessible. With nothing but clouds visible beneath them, the three could not determine the precise height of the summit. They did not have much confidence in the altimeter, because this instrument is not very reliable in the mountains, but from the difficulty they had in breathing they put the height at somewhere around the 7,000 metre-mark. They did not record their ascent as a sporting achievement, and consequently Victory Peak is officially considered to have been opened up five years later.

In 1943 a survey was made of this icy giant on the border of the USSR and China. But although it was photographed and described from all sides, this did not make it any easier of access. In a quarter of a century twelve expeditions undertook the ascent, and only four of those twelve got off without incident or catastrophe. By 1970 a total of 51 moun-

taineers had got right to the top, 70 had retreated before that point in the face of avalanches and hurricane-force windes, which are quite the norm in these parts, while 29 climbers remained behind in the snows of the Tien Shan forever.

In summer 1970 twelve teams assembled simultaneously in the foothills of Victory Peak. After their arrival the climbers spent

at least a month putting in some strenuous work preparing for the ascent, making brief sorties to distribute supplies of provisions and primus fuel along the prospective routes. The actual storming of the peak began at the end of July-beginning of August.

Groups of 8-12 climbers advanced upon the summit from east, north and west. On half the days the weather was fine, unusually lucky for this part of the world, and observers using telescopes kept an eye on the progress of the groups at all stages. Constant radio communication

was maintained with all groups throughout.

The most interesting and technically difficult route was that chosen by the Moscow group from the Burevestnik Society — a traverse along the Kokshaal-Tau, with successive ascents of five peaks. The first peak they would come to was Nehru Peak (6,742 metres), not hitherto trodden by man, while Victory Peak was the third.

A group of eight emerged onto Wild Glacier on August 7, after dinner, in very bad weather of the kind that usually accompanies the new moon in the mountains. Snowdrifts formed on the mountainsides as a result of a snowstorm, and the climbers were up to the waist in snow — and sometimes to the head. They advanced with extreme caution, so that they would not be swept down with an avalanche, crawled along fragile snow bridges not daring to breathe, over deep cracks. On August 9 they were confronted with a stony spine 600 metres high. This was the one and only ascent ladder against the side of Nehru Peak. It was not a very cosy feeling crawling along the stone blade, when to left and to right was a 500-metre drop. Eaves built up of snow impeded the view of the rock face and firm ice and created the impression of being a solid support but in fact easily broke off under the weight of the human body. It was fearful simply to contemplate all this. The climbers spent three days preparing and reconnoitering the crest, and on the morning of August 12 began to climb a rock face that towered at an angle of 75 degrees. A day was not long enough to climb the 300 metres to the top. The altitude was already having its effect: they would cut a step, haul themselves up onto it, and be bereft of strength, their hearts thumping painfully somewhere up in their throats.

They got the better of the ice wall finally in pitch dark on August 13, and with their last ounce of energy dug themselves a snow cave and went to sleep in it, without even bothering about a cold supper.

On the morning of August 14 six of the party continued to rest, while Lev Dobrovolsky and Valeri Putrin removed the snow blocks sealing the entrance to the cave, and in the terribly cold shadow of the north face approached a vertical wall consisting entirely of frozen snow, and began to prepare it for their attack.

An angle of 90 degrees is no joke, each movement tends to fling you away from the face, and they were obliged to cut spherical holes rather than steps. When they had ascended about 25 metres, eaves of snow were hanging over their heads, and they were forced to make a detour to the right. Finally their fingers, groping, felt the edge of the ice, and the first climber raised himself and was practically

blinded by the fierce mountain sun.

The summit!

Not a single living creature had stepped here before — they were the very first!

A little to the side of the highest point of Nehru Peak the group built a cairn of stones, caching beneath it the emblem of their sports society and a note with the names of the climbers who made the ascent.

On August 15, in a blizzard which cut down visibility to not much more than 20 metres, they

Continued on p. 108

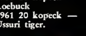
What's in a name? Especially a name like "Vneshtorgrekla-ma" ... What — you can't even pronounce it? Try again.
Vnesh-torg-reklama.
It just means "Foreign-trade-advertising".

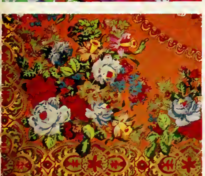
Внешторгреклама
Vneshtorgreklama

is the name of the only advertising agency in the Soviet Union dealing with foreign trade. It conducts all commercial advertising for Soviet export goods, and takes orders from trading organizations and commercial and industrial firms abroad for all recognized types of advertisements in the USSR.

Stamps

Another series of animal stamps has recently been issued, this time devoted to the Sikhote-Alin Reservation in the Soviet Far East.
The designer of these stamps, which are printed by the offset method on glazed paper, is V. Kolganov. Harrow perforations $12\frac{1}{2} \times 12$ and $12 \times 12\frac{1}{2}$. Catalogue numbers 3957—3961.
3957 4 kopeck — Mandarin duck
3958 6 kopeck — Kharza marten
3959 10 kopeck — Baribal bear
3960 16 kopeck — Roebuck
3961 20 kopeck — Ussuri tiger.





The Pavlovsky Shawls

by Tatyana IVANOVA

At first sight it seemed odd that there should be such an abundance of roses on Pavlovsky shawls. One would expect to find in this dour wooded region to the east of Moscow more ordinary and more modest blooms, the kind an artist might paint from life. Yet here the artist who designed the first Pavlovsky shawl lighted upon precisely this luxurious flower. That established the rose once and for all on the Pavlovsky shawl. But there is an explanation. It stems from the traditions of Russian folk art, with its predilection for images that are bright, festive and magical.

It is more than a century and a half ago since the first patterned shawls were woven in the little village of Melenki, near Moscow, marking the origin of the well-known Pavlovsky shawls and kerchiefs. In 1865 these shawls and kerchiefs won a silver medal at the All-Russia Exhibition of Russian Manufactured Goods. A century later, they were awarded the Grand Gold Medal and a first class diploma at an exhibition in Leipzig.

Fashions change in many spheres — architecture, furniture, and clothing, but the finest items of folk art are eternally young. The old clay toys are priced more highly than new ones, craftsmen today carve wooden figures designed 100 years ago, the old pattern of fairy-tale birds has been transferred to new fabrics — and there is a constant demand for all these things. Evidently the reasons for the popularity of folk art should be sought in man's natural anxiety to preserve his originality and national colouring.

The artistic traditions of Pavlovsky shawls are carefully preserved in the town of Pavlovsky Posad (near Moscow), where there is a factory with a world reputation. Today, in the archives of the factory's art studio, there are sketches dating from 1890 done by that fine artist Konstantin Abolikhin. On the basis of

Abolikhin's sketches contemporary craftsmen design shawls which are an essential part of the traditional ensemble of Russian high boots and sheepskin coat and have won great popularity throughout the country.

The Pavlovsky patterns are traditional: clear-cut, contrasting designs with no semitones, densely patterned corners, with slightly less design in the centre, and colour combinations which have established themselves for eternity — red, deep blue, or green on black or white.

The fact that tradition has been preserved does not, of course, mean that all the patterns are identical in character (or even the flower motif itself), for it is not the fashion today to slavishly repeat the style of a long-gone time, but only to hint at it in certain details. At the Pavlovsky Posad factory today, artists are working on designs for new shawls. They use not only Russian motifs, but subjects taken from Georgian chasing, the bright ornamentation on pottery from the Carpathians, and the complex ligature of Armenian stone-cutters. Nevertheless, the focal point of their work remains the development of variations on the old Pavlovsky patterns. Although in our days there is a very rich choice of existing patterns, many artists nevertheless find a trend in traditional style which specially appeals to them and proceed to develop it while orientating themselves on present-day fashions.

The printing workers stretch fine white wool over a large frame in the printing shop. They take up wooden bars with the pattern carved on them and dip them into vats containing various colours — all so fast that it is hard to follow the movements. The experienced eye knows precisely where to put the bars on the textile so that the colours do not run into one another.

Next door to this workshop in which craftsmen print shawls by hand, there is another shop in which photographic printing machines turn out Pavlovsky shawls twenty times as fast. Machine-made shawls are scarcely distinguishable from the hand-made articles, differing in minor details discernible only on a most exacting comparison. Nevertheless... nevertheless, the connoisseur always prefers a shawl made by his contemporaries in the time-honoured manner. Perhaps it is because in our age, when industrial art is becoming more and more prevalent in the things surrounding us, people turn to handicrafts in the search for something unique which violates the standard.

Every year the factory at Pavlovsky Posad produces 44 million pure woollen shawls, and 11 million of these are printed ones. Russian shawls decorated with fanciful fairy-tale flowers are exported to 36 countries.

Stories about Soviet Sports

Her Top Record Still Lies Ahead

by Alexei SREBNITSKY
from APN NEWSLETTER

Nadezhda Chizhova, the world's shot-put record holder, is 25. This is considered to be the ideal age for discus-throwers and shot-putters. She obviously agrees with this statistically-supported view, because she says she has not yet reached the limits of her possibilities.

And I believe her, although her present record, 20.48 metres, is already phenomenal.

Nadya's athletic career proves that in present-day sports top results can be achieved by others, besides prodigies. But shot-putting is believed to be a Herculean sport. I realise that this word sounds out of place in a discussion about women's competitions. But how about giantess Erlin Brown of the United States and the formidable Tamara Press of the Soviet Union, who for so many years held world records in the shot-put and the discus?

Nadezhda Chizhova is a woman of normal, though naturally not delicate build. She stands 5 feet 9.5 inches and weighs 176 pounds. Where others use the power of their muscles, she uses technique. Her advantages are rhythm, speed and well-trained movements.

Sport is Nadya's life and she cannot imagine taking up a sport and not being at the top. Second place is just not for her. That is why on two occasions she has been determined to give up her favourite sport.

In the first instance, youthful boldness triumphed over faint-heartedness. In the second, the talent for teaching and the powers of persuasion of her coach convinced her to go on.

The first episode is associated with the name of Tamara Press. Nadezhda came into big-time sport when Tamara was at the height of her fame and setting world records almost every time until she achieved the stupendous result of 18.55 metres. It was declared at the time the record of the century. With her runner-up more than a metre behind, Tamara had no rivals.

After many attempts, the youthful Nadezhda realised that it was pointless to try to fight Tamara: her records were too far advanced. Nadya would have given up sport if not for a happy incident in the winter of 1966. During a Leningrad competition which she had decided would be her last she brought into play all her technical and physical powers, and outdid Tamara.

That was followed by many other competitions, more impressive in scale and significance, by many victories and records.

"Which of your competitions do you remember best?" I asked her.

"The one in 1966, in the Leningrad manège. Then I first understood that even the invincible can be defeated." Her answer was unhesitating.

In August of that same year, Nadezhda Chizhova unexpectedly became leader of the Soviet women shot-putters at the European championships in Budapest (at the last minute it turned out that Tamara Press was

not participating). Few people thought of the newcomer as a serious threat. However, her first attempt secured a gold medal. To some people it may have come as a surprise, but not to Nadezhda herself: she knew that she could win.

Another critical moment was at the Mexico Olympics in 1968 where she arrived as uncontested favourite. Nadezhda was thought to have no serious rivals, so it was a sensation when M. Gummel, the best shot-putter of the German Democratic Republic, surpassed the world record mark and scored 19.61 metres. No one had ever overshot the 19-metre mark. The official world record, set by Chizhova, was almost a whole metre shorter.

To use a boxing, expression Nadezhda was floored — so much so that she even let another sportswoman, M. Lange, outdo her. The bronze medal was not what she had expected nor what had been expected of her.

Nadezhda Chizhova decided to give up sport — this time finally and for all time.

Victor Alexeyev, her coach, managed to convince her (though not at once) that she was strong enough and gifted enough to fight M. Gummel and her record.

Alexeyev is an amazing person and an amazing coach. At the shot-putting school in Leningrad, he seems to have something in the nature of a production line turning out record-breakers. Galina Zybina, Vladimir Trusenev, Tamara and Irina Press, Anatoli Mikhailov and Tatyana Shchelkanova — these are just a few of his notable pupils.

Alexeyev suggested that Nadezhda learn a new shot-putting technique, and developed a new system of training specially for her. Some of the exercises had never been used by any coach.

By the following spring she had re-established her world supremacy. Next, she was the first to conquer the 20-metre mark (20.09). True enough, just before the European championships in Athens, M. Gummel extended the record by one centimetre. But Athens was not Mexico: a self-confident, assured Chizhova performed in the capital of Greece.

In Athens, just before the beginning of the competition, Nadezhda told me:

"Can you keep a secret? Today I hope to win and set a world record."

She was not boasting. Nadezhda knew what she could do that day, and she did it. Her world record set in Athens still stands.

Nadezhda Chizhova comes from Siberia, and spent her childhood in the salt-mining town of Usolye-Sibirskoye, near Lake Baikal.

She went in for track-and-field late in life, in sports terms. At school she had tried shot-putting but her best result of seven metres portended no future success. Chizhova began regular training at the age of 15. After a time her trainer, Dmitri Gladyshev, realised that he could not teach the girl anything more, so he gave Nadezhda a letter of recommendation to Victor Alexeyev of Leningrad, with whom he was acquainted.

In 1963, Nadezhda came to Leningrad and entered the Physical Training College. Alexeyev took her on.

In the autumn of 1964, while Tamara Press was performing spectacularly at the Tokyo Olympics, the sports press first mentioned 19-year-old Nadezhda Chizhova: at the First All-European Junior Games in Warsaw she won the shot-put contest with a result of 16.6 metres.

That was the beginning.

Nadezhda knows how much friendly help and support can mean in sports. At one time she was greatly encouraged by the world record-holder, Galina Zybina, of whom she thinks as her second coach. Nadezhda herself, when she made friends with Valentina Tikhomirova, a pentathlon contender from Orel, spent days helping her develop her shot-putting technique. In Budapest, Tikhomirova won the European championship. Recently, she was the first sportswoman to overshoot the 5,000-point mark in the pentathlon. Her results in shot-putting, one of the five events, are continually improving. Here the hand of Nadezhda Chizhova can be felt.

Nadezhda is loved by her friends, who forgive her a certain abruptness which offends people who do not know her well. I remember that after her victory at the European championships in Athens, the sponsors of the competition asked her to give an interview at the stadium, where she had just performed. Asked by one of the journalists: "What weight can you lift?" she retorted angrily: "Don't you think that putting a question like that to a young woman is, to say the least, discourteous?"

She really does dislike weight-lifting, a purely male sport, and prefers, as is common to the Alexeyev school, gymnastics and acrobatics to build strength.

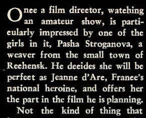
Recently, I asked Nadezhda about her plans.

"I'll be a coach," she said. "I want to become as good a teacher as my own coach, Victor Alexeyev."

Jeanne d'Arc of Rechensk

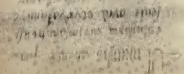
by Tatyana KHLOPLYANKINA

from the newspaper MOSKOVSKAYA PRAVDA



Once a film director, watching an amateur show, is particularly impressed by one of the girls in it, Pasha Stroganova, a weaver from the small town of Rechensk. He decides she will be perfect as Jeanne d'Arc, France's national heroine, and offers her the part in the film he is planning.

Not the kind of thing that happens every day. A role like this would be a challenge to many a professional actress. However, the director feels sure that this angular girl will make an excellent Jeanne.



When she has passed all the screen tests and filming is well under way, two of Pasha's girl-friends from Rechensk come to see her on location.

"Pasha," they asked. "How come you were given a part in a film?"

"I'm from the people," she told them. "And so was Jeanne."

"But aren't we, too?" they objected.

She had to think of a better argument.

"I look right for the part," she said. "I've got the right sharpness of reaction and a similar temperament to Jeanne."

That explanation, obviously picked up from somebody else, elicited respectful nods from both girls.

Sharpness of reaction and temperament...

In themselves these words do not explain much either. To see what has happened to Pasha and why she of all girls is "offered a film part", let us take a look at the laughing, sad, angry, dreaming heroine of a film within a film — Pasha,

as played by the young film star Inna Churikova, see her when she is still a Rechensk weaver, unaware of what is in store for her.

"She is unspectacular" or "she has an interesting face," people say about her, avoiding the brutal word "plain". Pasha is really plain, as everybody knows. On the dance floor, her girl-friends leave whole collection of bags in her care — nobody will ask Pasha for a dance, anyway.

However, one young man does invite her.

She feels infinitely happy.

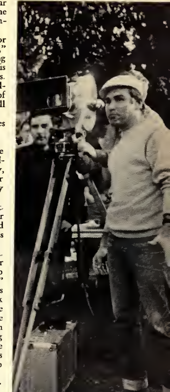
She dances with him in the current style, shaking her shoulders and making eyes. The happy, slightly silly expression on her face and her giggling are only comic.

But Pasha does not feel it. After all, a boy has picked her out of all the other girls. And she is overjoyed when she meets him a few days later.

She is a strange girl, Pasha. After following him around for about two hours she refuses to let him into her flat. "It's banal," she explains. However, he steals his way in and, when in the dark corridor he bumps into some basins, she says sternly: "You're compromising me." Later, when he inadvertently falls asleep sitting on her sofa, she goes to his wife and explains that the other girl's husband is asleep at her place so

On location.

The trial of Jeanne d'Arc. A shot from the film.



she need not worry about him, and that she herself is going to spend the night at a girl-friend's.

But what appears odd at first glance is not odd at all: we are laughing through our tears. Because Churikova's Pasha endears herself to us the moment she appears on the screen: she is awkward and sensitive, and the spectator immediately feels a surge of sympathy for all her worries and alarms: he realises her strength of spirit, her inner beauty. This plain Pasha is a personality.

This girl will never agree to be a shadow, a background to somebody else's life. She herself lives avidly, with all her heart. She expects no miracle for herself but creates this miracle from minor things, from what to unimaginative people is prose but to her is poetry. And Arkadi, her chance dancing partner, the quiet husband of a beautiful wife, seems to Pasha like some knight invested with virtues of which he himself knows nothing.

They say great actors do a bit of play-acting in life, too. This seems to be true of Pasha. She is constantly play-acting. But who does she try to impersonate? She plays the part of herself — a kind, happy, poetic girl, full of inner beauty — but that part which to most others remains hidden, and this playing of hers, so to speak, sweeps the cobwebs from people, things and events. The world becomes cleaner and brighter, puts on a festive appearance, because Pasha generously imparts to it her own inner qualities.

That is why she must have been "offered a part in a film". That is why, donning a black wig and the short cape of Jeanne d'Arc, she plumbs the character of her great heroine — her prowess, pride and purity. Pasha did not have to invent anything for this role. She just put into it her own attitude to the world, her temperament and talent.

The story of Pasha Stroganova is, of course, unique in a way. The authors of **The Beginning**, a Lenfilm Studio production, noted film writer Yevgeni Gabrilovich and young film director Gleb Panfilov, were not trying to show that any "unspectacular" but gifted girl with a live imagination can make a career as a film star, the way the hard-working Cinderella met her kindly, devoted Prince. Their film is not a fairy-tale. Nor is it hundred per cent reality. It defies classification: people watch it as they would a comedy but think about serious things — about talent and the right and duty of each human to be, above all, a personality. Of course, the director might never have gone to Rechensk, might have chosen his Jeanne from one of the big theatres or acting studios. It is clear, at any rate, that only a professional actress like Inna Churikova could have played both Jeanne d'Arc and Pasha Stroganova — two challenging roles rolled into one.

The Rechensk girls are delighted that their friend Pasha has suddenly become a film star. A shot from the film.

But this judgement is hardly in contradiction to the film. What does it matter whether or not Pasha becomes an actress? Suppose she does not. What does it change for the audience or herself? All the same, she will remain an infinitely interesting person, because she is a gifted person, and the world is much richer in gifted people than we think. The film urges us to take a closer look at life and at this or that girl who stands unnoticed in a crowd of girl-friends or hurries off to her factory every morning. Perhaps she will never become famous but how rich her inner world is! And what an interesting world it is! When, in the closing sequence, we watch a huge festive-looking hall and hear an audience applaud Jeanne d'Arc we understand that they are applauding Pasha Stroganova, the factory girl from Rechensk, and with them we applaud her, too.

THE STORMING OF...
Continued from p. 89

made the ascent of Vazha Pshavela Peak. They moved on further, and spent the night at a height of 7,100 metres, with the roar of a hurricane force wind for a lullaby.

The next day, the 16th, on a bright sunny morning, they stormed Victory Peak. A spine just below the summit was inordinately long, and it was not until 5 o'clock that they stood on the summit of the northernmost peak of 7,000 metre or more, and they raised their picks to the evening sky.

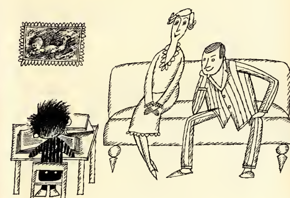
They had to descend right away, for one of the members of the expedition was taken ill. With the constant oxygen hunger experienced at high altitudes, the body does not relax completely, even after it has had special training, and day after day it accumulates fatigue.

Next morning, August 18, Victor Maximov and Lev Dobrovolsky brought the sick man down by the north face. The remaining five of the team, headed by Valentin Ivanov, continued on their way. In less than two whole days — instead of the six regarded as normal, the group had overcome Soviet Armenia Peak and East Victory Peak as well, and on August 19 the party descended by the Chon-Toren Pass to the base camp at Zvezdochka Glacier.

In the USSR summer 1970 mountaineering contest, the Moscow Burevestnik team won the gold medals. Altogether in that fruitful season 63 climbers set foot on the summit of Victory Peak — a phenomenal number when one thinks of its history. Out of those, 23 (of whom two were women) now bear the title of "Snow Leopard", having climbed all four 7,000 metre peaks in the USSR.

by Yuri LEONOV
from the magazine YUNOST

The Prodigy



Mitya Masov was an infant prodigy, and when the time came to go to school it was all as simple as playing hopscotch Though he was three years younger than his classmates, he never had to sit for hours over his homework, and could not understand why they grumbled about it Nor could he understand their apprehension at exam time He always got top marks in everything He was just like the other boys, however, in his attitude to pigtails, which, he pointed out, were specially designed for tweaking But here his interest in them

ended, and it was not until he had finished school and arrived at the end of his first year at college that his views began to expand.

Mitya was on the way to his oral exam in cybernetics when he noticed a little girl by the window with short, perky pigtails. What was she doing here? She obviously belonged in the school-yard next door. Probably wanted to get the feel of a college quadrangle.

He sat down beside her.

"You a student here?" Flattery paid off sometimes.

"No, but you are, aren't you?"

"That's right. I have an exam today, as a matter of fact!"

"So have I!" said the girl brightly.

"What are you doing here then?" Mitya asked surprised.

"Shaking in my boots. I'm terribly nervous, really. Aren't you?" Her glance was mischievous.

"No!" said Mitya. "Not a bit. The only thing I haven't looked at is the stuff on computer design, but it's so simple, they wouldn't ask me that!" This time she looked properly impressed.

As he entered the examination room the first thing he saw was the pigtails. Unaccountably, the owner was sitting at the examiner's desk.

"The Professor's been called away, and he's asked me to take over. I've only recently finished my postgraduate course and I'm so thrilled! You're the first student I've ever examined. Now, let's see. Tell me what you know about computer design."

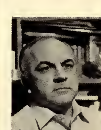
Another damn prodigy!

Mikhail SAGATELYAN

DALLAS: who how why ?

Condensed from the magazine AURORA, Leningrad

Translated by Monica WHYTE



About the Author

Mikhail Sagatelyan was born in 1927 in Saratov, on the Volga, but his family moved to Moscow when he was five years old. His schooling was interrupted by the war and Mikhail volunteered for the Navy. In 1943, as a naval cadet school student, he took part in operations on the Baltic Sea. In the victorious month of May 1945 he was not quite 18 years of age and held the rank of petty officer.

After demobilisation Mikhail returned to Moscow and entered the Institute of International Relations. Five years later he graduated as a journalist specialising in international affairs. His first job was with IZVESTIA, later he worked for the weekly NEW TIMES.

In 1959 he was offered a job with TASS, the Soviet news agency, which he accepted, and was posted to Washington.

At the present time Mikhail Sagatelyan is IZVESTIA'S deputy foreign editor. He is married and has one son.

A Word from the Author

A journalist is, in a sense, an apprentice historian. For obvious reasons his spade-work cannot be compared to that of the investigator, nor his conclusions to the sentence of a judge. Nevertheless, to describe what has been seen and heard, lived through and thought out (if it is of valid interest to the public at large) is the first duty of a reporter.

Taking all this into consideration, there are two main reasons why I have tackled the subject of the assassination of John F. Kennedy.

In the first place, fate ordained that in the years 1959-64 I was the TASS Washington correspondent covering the White House and State Department. Therefore, insofar as it is possible for a Soviet citizen, I was a very close witness of John Kennedy's election campaign for the White House, of the 1,036 days of his presidency, and of the first few months of his successor's term of office.

Secondly, after the shooting in Dallas, when Martin Luther King was assassinated in Memphis and Robert Kennedy was killed in Los Angeles, it became clear that organised terror in the country had become a weapon of certain forces who were acting with confidence, insolence and with impunity. In the circumstances, no one in present-day America, or anywhere else for that matter, would care to maintain (and no one tries) that the series of political crimes that began in Dallas have now ended.

It seems to me that the three killings, done with astounding consistency and purposefulness against the general background of problems and events troubling and rending the citadel of world capitalism, should sharply focus attention and interest on what is happening today and may happen tomorrow in the political jungle of the United States of America.

Why? Because if the forces which declared themselves in November, 1963, in Dallas should ever manage to gain ascendancy in the struggle for power in America, the country may be in for truly grim times. The history of the 20th century already has one example of what it meant for the world when in one European country the extreme forces of imperialism took power.

I know: there are still quite a few honest people in the world and particularly in America who will find such an analogy excessive. The basis for such doubts lies in the completely different external face presented by the extremist wing of American reaction. It steps forth under the banner of defence of the American Constitution and legacy of their forefathers — the founders

of the republic — in other words, for everything that made America the "promised land" in the eyes of people. This masquerade, combined with material and technical progress, still deceives many.

And another thing. Any partially unsolved mystery, especially if it concerns a major political event, leads to unflagging interest in possible solutions — on New York's Broadway the play **Who Assassinated Abraham Lincoln?** is still produced. On the other hand, anyone dealing with such a subject faces the constant temptation of being unjustifiably categorical in his opinions. I have done my best to avoid such an outcome. In any case, in order to find out whether the author has succeeded or not, the book has to be read. For those who intend to do so, a last word of warning: I did not set myself the task of exhaustively examining all the circumstances connected with the killing in Dallas. Hundreds of books, including the most detailed and publicised of all — William Manchester's **Death of a President** — have been devoted to the subject.

I set myself a more modest task: to write about what I have seen and heard, experienced and thought and to add to my story that which happened later and helped, in my view, to evolve well-founded answers to the questions on the title-page.

* * *

"They Finally Got Him..."

"Hell, that bastard will drive me nuts!" Fred said and glanced at the cage standing beside the entrance to the main dining-room.

"The bastard" — a huge black bird of a species unfamiliar to me — was a present to the owner of Blackie's House of Beef restaurant either from a high-ranking Latin American guest or from somebody important in the State Department. The strange creature from the banks of the Amazon did not afford any pleasure to customers. Every two or three minutes the bird would open its hooked yellow beak and the restaurant would resound to an unearthly sound. It was such a chilling combination of the hiss of a snake, the howl of a human and an ear-shattering whistle, that I for one, gagged when I first heard it.

Blackie's House of Beef, or simply "Blackie's" was quite a popular restaurant. The steaks were excellent and the cheesecake was the most famous in Washington. Blackie's is not far from the State Department and so quite often American and foreign diplomats and journalists would drop in. The enterprising owner had even installed a United

Press International teletype which was very convenient and handy for his steady customers.

The first journalistic reactions to many international events were often arrived at right there, at one of Blackie's tables. Trial balloons were floated, soundings were taken, rumours were started and scotched. All these mental fireworks and battles had no reflection in appearances. Well-dressed people sipped their drinks, chewed on the freshest of beef and talked in even-toned, moderate voices. From time to time someone would stroll over to the teletype and skim through the news.

That day, November 22, 1963, Fred and I discussed the forthcoming visit of the new West German chancellor, Ludwig Erhard (he was expected in Washington on November 24). Lunch was unhurried, it had been a quiet, uneventful day. Hardly anyone of importance in the Administration remained in the capital. The President and the Vice-President were in Texas for the second day running on some party business which at the time did not overly interest foreign correspondents.

Six members of the cabinet, headed by Secretary of State Dean Rusk, had left for Japan for trade talks the day before. Together with them, both Washington "information bosses", Pierre Salinger, White House Press Secretary, and Robert Manning, Assistant Secretary of State for Public Affairs, had also gone.

The TASS office was quiet, too. One of us had gone off with the newly arrived **Izvestia** correspondent in search of a suitable apartment. The second one was in Congress, as usual. I was left to "mind the shop". After going through the morning papers and sending off a couple of despatches, I sat down to write a commentary on Erhard's forthcoming visit and that took me till noon, when it was time to start out for Blackie's.

Fred worked for the State Department. He was an intelligent and experienced diplomat who had received his education in Europe, which as a rule reflected favourably on such diplomats in comparison with their American-educated colleagues. In general, both of us did our jobs. Fred explained the purposes of the forthcoming visit according to the official line, while I tried to probe deeper and get something more interesting than that.

Irritating both of us, interrupting our train of thought every few minutes, came the raucous squawks of the bird in the cage by the teletype. Later Fred maintained they were particularly ill-omened that day.

Our conversation was coming to an end, we had already turned to the weather. On that topic we had no disagreement: the late fall, even for the mild Washington climate, was exceptionally sunny, warm and dry.

"Nature is good to us," Fred said. "Americans have been damn lucky, in general, in this little world of ours. Take for instance —"

At that moment the teletype warning bell began to ring shrilly which signified that an announcement of such importance would be relayed in a moment that all other business should be dropped. Usually the bell would ring two or three times, a maximum of five. Now it rang and rang.

Along with me, several others leaped for the teletype. Impatiently tapping out its message, correcting its own misprints, the teletype spelled out letter by letter:

"K-e-n-n-e-d-y s-e-r-i-o-u-s-l-y w-o-u-n-d-e-d, p-o-s-s-i-b-l-y s-e-r-i-o-u-s-l-y, p-o-s-s-i-b-l-y f-a-t-a-l-l-y b-y a-s-s-a-s-s-i-n'-s b-u-l-l-e-t i-n D-a-l-l-a-s."*

I looked at my watch: it was 1:39 p.m. Someone beside me groaned: "Oh God, they finally got him!" Whom does he have in mind? I wondered. Our eyes met and the speaker hastily lowered his gaze to the teletype. Seeing my face, Fred jumped up and met me halfway with an unspoken question.

"Someone shot at the President in Dallas," I said.

Fred seemed to shrink, as though the air had been let out of him. He began to blink rapidly and for no reason muttered:

"That means Erhard's visit will be postponed . . ."

He was obviously going to say something else when the bird screeched again. Fred's face twisted and he suddenly yelled:

"You goddamn bastards, take that lousy creature away! Can't you hear? The President is killed! Kennedy's killed, you stupid apes! Oh Lord, how I hate your stupid kissers!"

The dining-room filled with an anxious hum. I threw some money on the table, ran into the street, grabbed a passing taxi and headed for the White House.

On the way I tried to concentrate. I couldn't. Complete chaos reigned in my head. Scattered, unfinished thoughts chased each other round and round.

How many inhabitants in Dallas? Will Kennedy live? Dallas, that's the capital of Texas, isn't it? Who shot him — a local or an outsider? A month ago the mob closed in on Adlai Stevenson in that city and spat on him. No, the capital of Texas is Austin . . . Is Jackie alive? UPI didn't say anything about her . . . If Kennedy dies, Johnson will become President . . . So what's the population of that damned Dallas? Six hundred thousand, I think . . . What should I send first to Moscow? Here we are at last . . . In Dallas, wiping the spit from his face, Stevenson had said: "Are these human beings or are these animals?"

* The first UPI announcement, sent out five minutes earlier, read: "Three shots were fired at President Kennedy's motorcade in downtown Dallas."

Reporters were running towards the north-west gate of the White House. Two cameramen, kneeling, were filming them. The guard checking our press passes was surprised by the rush and essayed a joke:

"What's the rush, fellows, making your get-away after a bank robbery?"

Nobody replied. Everyone was in a hurry to reach the West Wing of the White House where the press section was located. Alas, there was nothing to hurry for: the staff had just learned of the shooting in Dallas themselves.

The senior man in the section, Lee White, Salinger's technical assistant, was completely lost and to all questions repeated:

"Can't tell you anything. We ourselves know only what's been reported by the agencies, radio and television . . ."

In the centre of the hall where journalists usually waited for the beginning of Salinger's daily press conferences, or for the exit of the President's important visitors, stood two TV sets. Credit must be given to the American TV networks for the professionalism and promptness with which they covered the events following the killing in Dallas. But that first hour after the shots were fired, nothing basically new was reported, even though the stations did not go off the air. Therefore the attention of those present kept switching to the teletypes of the press agencies. Secretaries with faces red and swollen from weeping, hung out their latest despatches in the narrow corridor leading past Salinger's office, the conference-room of the National Security Council and Kennedy's office.

But for that matter, the agencies could not boast of an abundance of information out of Dallas either.

There was nothing definite about Kennedy's condition for a long time. At last, at 2:02 p.m. the agencies carried a statement by a representative of the Texas Democratic Party that the President's condition was "very grave". At 2:11 p.m. it was announced from the hospital that two Catholic priests had been summoned to the President's bedside. At 2:21 it was reported that rumours were circulating in the hospital that Kennedy was dead. At 2:31 a priest leaving the hospital (not one of the two called in) told reporters; "I don't believe that President Kennedy will die."

At 2:32 p.m. the chief correspondent of the Associated Press accredited to the White House, reported from Dallas: "Two priests who were with Kennedy say he is dead of bullet wounds." Four minutes later this was officially confirmed to those of us who were in the White House.

And so, another assassinated president was added to the his-

tory of America, the fourth one in the 188 years of its existence. Reporting this sorrowful statistic in its first extra edition, **The Washington Post** noted as though in passing: "An assassin's bullet has catapulted Lyndon Baines Johnson into the White House."

Depression and bewilderment reigned in the press section of the White House. All those Americans, all those newsmen that I had known over some years, showed a totally unexpected aspect to me for the first time: they were ashamed. They were ashamed before each other, before their foreign colleagues and finally, before the world.

The same feeling could be read in the faces of the hundreds of Washingtonians who gathered behind the White House fence in the very first hour after the assassination. People stood in crushed silence, unwillingly replied to the questions of reporters. I also asked questions. The replies were different in words, but the same in content. One elderly man, instead of answering, silently pointed to a shabby black car that was cruising along Pennsylvania Avenue with a sign on the top: "The wrath of God is upon us unless we turn from our sinful ways." A newspaper published the comment of a postal employee: "It seems to me that each one of us is guilty. Where does all the hate in America come from?"

The 17-year-old daughter of a leading figure in the "New Frontier" asked her father when she learned of the murder: "Daddy, what has happened to our country? If this is the kind of country we have, I don't want to live here."

Such questions arose in all their magnitude before thousands of Americans, precisely in those few hours after the killing. As though attempting to drive away with words the inexorably advancing era of political assassinations, **The Washington Post** adjured its readers in its first extra edition:

"No one will be willing to believe that this act could have been committed by anyone governed by a normal mind in a rational state. Our politics, our differences and our divisions are not those out of which so foul a deed could arise. It must be put down to madness."

At the time it was still possible for some Americans, and non-Americans, to accept such an explanation.

However, other newspapers across the country had a much more realistic appraisal of the meaning and significance of the shooting in Dallas. I have kept a thick file of clippings of the first editorials published by the local press in America. Here is a sample of a few of the more noteworthy ones:

Richmond Times-Dispatch: The assassination, "coming as it does as the latest in a series of violent deaths of heads of state, is a disgrace to the United States and a blot on the good name of this country."

St. Louis Post-Dispatch: "A national tragedy of incalculable proportions . . . What is wrong with the United States that it can provide the environment for such an act? There is a sickness in the Nation when political differences cannot be accepted and settled in the democratic way. Our democracy itself is in hazard."

Philadelphia Bulletin: "We pride ourselves that we are a people who have accepted the law of democracy; that we thrash out our differences through open discussion and accept the verdict of the ballot. But in our pride, we forget perhaps that there are those among us who do not accept this law: People who cannot accept honest debate and who resort to the gun as the final arbiter. We have had a bitter lesson."

San Francisco Chronicle: "Who are we Americans, who claim the leadership of the free world, that we should have allowed this kind of violence and insensate thing to happen to our national leaders four times within a century? The question is an accusation: let us hope that others will be too charitable to hurl it at us."

Salt Lake City Tribune: "Only by chance did this horrible crime blacken the name of Dallas. It could have happened almost anywhere."

Jackson (Mich.) Citizen-Patriot: "Look in the mirror, America! Is this what you want — a society so sick that our President isn't safe — that he should die?"

Seattle Times: "Mr. Kennedy, who regarded the preservation of peace as the supreme duty of his administration, has fallen victim to the spirit of unreasoned violence he worked so hard to quell."

Nearly 150 journalists had gathered in the West Wing of the White House. All of us were immediately faced with three inevitable and main questions: Who? How? Why?

The whole world awaited the answers, above all from our American colleagues, who had accompanied the President on his fatal journey, and from us, who were in the centre of political power in the United States. For the second time since October 1962 the weight of professional responsibility lay heavily on the shoulders of journalists accredited to the White House. At that time an anxious world awaited word from us that the Caribbean missile crisis was settled. Now they wanted an explanation of what had happened in Texas.

At this point I must mention another peculiarity of those first few hours following the tragedy. Immeasurably more than anywhere else, political journalism in the United States is based on the principle of "brain-washing". On November 22, 1963, this rule was cardinally violated. For the period of one hour and sixteen minutes that elapsed between the shooting of Kennedy and the

apprehension of Oswald, the American information media were denied any official version whatsoever. No one "brain-washed editors, commentators, reporters. They were left to their own resources in the first feverish searchings for reasons and perpetrators, in their first analysis of the crime. It was unthinkable to wait for an official version: the reader, TV-viewer, radio listener had to be instantly presented with some version of the motives for the assassination, hints on the possible political overtones of the killer or killers. Twenty minutes after the shots rang out in Dallas, over 75 million adult Americans knew about it.

The authors of the first commentaries wrote, in general, what they themselves thought, and quoted the opinions of those people whom they considered authoritative. In my notebook of the time I have the following entry: "Judging by everything, they are saying the same thing in Dallas as here, in the White House. At least **The Washington Post** reports from there: 'The assumption became quite general very quickly that a right-wing fanatic had done the shooting'."

"Chalmers Roberts noted even more succinctly: 'Yet there are many in the United States who felt Mr. Kennedy was going too far in seeking a rapprochement with the Soviet Union.' In another article Roberts wrote: 'As everyone knows, the Kennedy-Johnson ticket in the successful 1960 Presidential campaign was born of political expediency.' (Roberts was obviously hinting at the white Southern vote which Kennedy would not have received without Johnson.) 'As a part of the Kennedy Administration, Lyndon B. Johnson faithfully echoed his chief. But now he is master alone'."

At the time none of us could fully appreciate the ominous significance for America of that last sentence.

Most Washington journalists were convinced that the assassination was the work of the ultra-Right. As a matter of fact, what's the use of quoting journalists when six members of Kennedy's cabinet reached the same conclusion: Secretary of State, Dean Rusk; Secretary of the Treasury, Douglas Dillon; Secretary of the Interior, Stewart Udall; Secretary of Commerce, Luther Hodges; Secretary of Agriculture, Orville Freeman; and Secretary of Labour, Willard Wirtz. All of them were on their way to Tokyo for the annual trade talks. According to Pierre Salinger who accompanied them, on learning of the death of the President, they concluded that "the killer must be some lunatic from those outrageously militant Dallas right-wingers". Salinger first told the story in his book **With Kennedy** published in the USA in 1966. Since then none of the cabinet members quoted by him have repudiated his eye-witness

account...

The same opinion as to the political colouration of the shooting was shared by the top military leaders who were in Washington at the time. General Maxwell Taylor, Chairman of the Joint Chiefs of Staff, after a conference with the Defence Secretary, Robert McNamara, justly considered that the assassination of a government leader is usually accompanied by an attempt to overthrow the government. That is why Taylor's first step was to place all military units in the Washington area on the alert. One of the reasons for such a decision was that Washington telephone communications were almost totally disrupted. The privately-owned network went dead in the first few minutes after the shooting. Later the company tersely explained the extraordinary occurrence as a "simple over-loading of the lines". Neither the company nor the authorities ever returned to the question. But the coincidence of the timing of the assassination and the cut telephone service inevitably led one's thoughts in a certain direction.

Therefore, the fears which arose following the shooting in Dallas that the killing was the opening act of a plot concerned a definite target. The talk was of an internal conspiracy of the Right...

And suddenly... At 2:50 p.m. the Dallas police announced that they had arrested 24-year-old Lee Harvey Oswald in connection with the shooting. In making the announcement it was stated that Oswald was "a pro-Castro Marxist". Later came details: at the end of May 1962 Oswald had returned to the United States from the USSR, where he had lived for three years, bringing with him his Russian wife, Marina. He had requested Soviet citizenship but had been refused.

Yes, this really was something to be astounded at. American reporters standing next to me by the teletype kept shaking their heads in disbelief. Ralph Dungan, one of the Kennedy aides who had stayed behind in Washington, exclaimed: "And the hell of it is, they'll blame it all on that 24-year-old boy." Who "they" were, Dungan did not specify.

Thus, the intermission in "brain-washing" was at an end. An official version had made its appearance and everything returned to its rightful place.

The Dallas police, seemingly more interested in feeding the press than with the course of law and justice, made one sensational "revelation" after another. The Dallas district attorney, Henry Wade, and the chief of police, Jess Curry, accused Lee Harvey Oswald of being a member of the Communist Party of the USA, a member of the Fair Play for Cuba Committee, and of belonging to an "international conspiracy for the purpose of assassinating President Kennedy" all at the same time. Oh yes, there was such an

accusation, although it is true that it was only maintained for a few hours, until the State Department issued a statement that no proof of such a conspiracy existed.

The majority of the American mass media of information for some reason discarded the slightest tinge of doubt (even though the police investigation was just beginning) and printed, for instance, pictures of the Texas School Book Depository Building with an arrow pointing to a window on the sixth floor and categorically and unequivocally announced that Kennedy had been shot from there. No stipulations or reservations, none of the "it is alleged" or "according to police authorities" formulae so strictly observed by the newspapers in all other criminal cases were on this occasion adopted.

As "evidence" the press and television constantly referred to Oswald's stay in the Soviet Union and to the fact that he had married a Soviet citizen.

And still, in spite of the insistent campaign, I formed the impression even then that Americans in their mass were, to say the least, sceptical in their attitude to this version. I recall one TV broadcast from Rockefeller Plaza in New York, when the interviewer stopped passers-by and asked them their opinion of the reasons for the killing. Of the score or so questioned, they all replied approximately as follows: the crime was perpetrated by ultra-conservatives who spread hate in the South.

"A Marxist from Dallas," one of the White House guards said in my presence. "That's like saying a Martian from Venus! Those Texan bums couldn't even think up a more likely story . . ."

As far as the 150 journalists in the White House hall were concerned, many of them never did accept the existence of a "communist conspiracy". Some of them told me so directly face to face. Others preferred to await further development of events. However, at no time after the announcements or in the following days of national mourning did I ever experience hostility, either towards myself or towards my country, from those around me. And the police protection which the new president ordered posted around the Soviet embassy in Washington proved to be quite unnecessary.

To my dying day I will remember the conversation which took place with an American colleague shortly after the police arrested Oswald. I will not give his name — if I did he might lose everything that he has achieved through his talent and years of hard work. I will call him Henry.

Henry, highly tense and nervous, wanted me to go with him to the dead President's office. "It's very, very important," he insisted. We walked down the corridor past Salinger's office and past the National Security Council's conference room. We stopped

in front of the open door leading to Kennedy's office. Workers were putting down a new rug of a blood-red colour.

"Remember what you've seen, Mike," Henry muttered, "and what I am going to tell you when we get back to the hall . . ."

In the hall, Henry continued: "I don't want you to get the impression that any of us here, with the exception of fanatics and imbeciles, believe this Texas red plot fairy-tale. Everything is much more ugly . . . Two days ago Jackie ordered the rug in the President's office changed — and by chance it has now become a symbol. But you should know, if she could boss here now, then the walls of this office would be painted bloody red . . ."

"What are you talking about?"

"Mike," he insisted, "the White House is splashed in blood and the new man won't be able to wash it off. We've had presidents killed before, but such a villainous crime we have not had. Remember what I'm telling you and don't rush to conclusions about who did it and why, whatever you hear today, tomorrow, the day after, in a month or in a year. Wait some years and you won't be sorry: only then we might come to the truth. Shaky times are coming . . ."

My immediate impression was that the incident was a result of the extreme nervous shock Henry had suffered — he was an ardent admirer of Kennedy's "New Frontier".

I first seriously began to ponder over Henry's statements when I read Malcolm Kilduff's account of a conversation with Lyndon Johnson. Kilduff was Salinger's deputy and accompanied Kennedy on the Texas trip. The conversation took place right after the doctors at the Parkland Hospital in Dallas pronounced the President dead at 2 p.m.

Kilduff located the new President near the surgery, in a small room that was heavily guarded, and asked permission to make a statement to the press about Kennedy's death. Johnson disagreed:

"No. Wait. We don't know whether it's a communist conspiracy or not. I'd better get out of here and back to the plane."

To properly evaluate these words of the Vice-President, it must be remembered: They were said almost an hour before the arrest of the "Marxist" Oswald or anyone else.

This means that the first and so far as known, the only member of the government of the United States of America to speak about a "communist conspiracy" before the arrest of anyone on suspicion of murder, was Lyndon B. Johnson. Six members of Kennedy's cabinet, including the Secretary of State and the top leadership of the Pentagon, had reached the opposite conclusion — that it was a plot of the right-wing forces. Lyndon Johnson, who was immeasurably better in-

formed than they as to the mood prevailing in Texan political circles — he is heart and blood one of them, a native son — Lyndon Johnson, who invariably proclaimed that he knew exactly what his fellow-Texans were thinking and feeling; Lyndon Johnson, who knew of the possibility of incidents being staged in Dallas by the Right; Lyndon Johnson, who insisted that Kennedy make the trip to Texas; this Lyndon Johnson, it seems, was the first govenment figure in America to put forward the theory of a "communist conspiracy"!

However, in such a serious affair one must not rush to conclusions. After all, everything could be explained simply as an example of the deep effect that 18 years of the "cold war" and prevailing anti-communist hysteria had had even on such a political mind that a Vice-President of the United States could be presumed to possess.

Aboard USAF-1

The personal presidential Boeing, United States Air Force One, with Kennedy's body, Jacqueline Kennedy, Lyndon Johnson and various advisers, secretaries, guards and reporters that had accompanied them on the trip, landed at Washington's Andrews Air Force Base at 6:03 p.m. local time.

It was met by those high-ranking official figures who had remained in Washington or who had managed to return to the capital in time. Besides McNamara, Robert and Edward Kennedy, Under-Secretary of State George Ball, Special Assistant to the President McGeorge Bundy, Congress leaders were present and of course a swarm of reporters. All of us were allowed out on the field. Behind a fence some 3,000 Washingtonians who had made it past the cordons thrown up around the air base, gathered to watch.

Television floodlights and cameras first trained on the huge Boeing-707 which with a thunderous roar rolled up, then focussed on the tail — "the Presidential exit". Instead of the usual ramp, a bright yellow truck with a lifting platform pulled up. A staircase ramp was wheeled up to the front exit. While it was still being moved into position, Robert Kennedy ran up the steps and then stood, shifting from one foot to the other. No sooner did the door open than he dashed inside.

A few minutes later the coffin was lowered to the ground and transferred to a Naval ambulance. Jacqueline, Robert and Edward Kennedy climbed in along with Major-General Chester V. Clifton, the dead President's Military Aide. Those who had left the plane by a rear exit got into various waiting cars and the whole cavalcade disappeared into the night.

The reporters began to buzz anxiously: "Where is Johnson? Why hadn't he come out together with Jackie and Bobby? What had happened? Why had the Kennedys gone alone?" No one had any answers. The staff of the White House press department seemed no less bemused than we were.

But then the dazzling floodlights crept over to the staircase ramp leading to the front door and froze there in a drawn-out pause. At last, descending heavily with measured step, as though weighed down by an invisible burden, came Lyndon Baines Johnson. To his left, Lady Bird tripped lightly downwards. The new President appeared calm, gloomy and solemn. On the other hand, Lady Bird was visibly excited. Johnson stopped in front of the TV cameras and the dozens of microphones and prepared to say something. Suddenly, behind him on the runway the roar of helicopters went up and the President's words were drowned out. At the same moment Lady Bird spotted someone in the crowd, opened her thin lips in a smile and began to raise her arm in order to wave. Johnson caught her arm and jerked it down and then as though nothing had occurred, paying no further attention to his now subdued wife, continued to speak words which none of us could make sense of over the noise of the helicopters.

Finishing his speech and taking Lady Bird's arm, Johnson stepped out of the glare of lights into semi-darkness. They were surrounded by McNamara, Ball, various senators and other people. A few minutes later the new President headed for a helicopter which took him and his party to the White House. The reporters ran to their cars and raced back to Washington and the White House. Rumour had it that the Cabinet would meet.

The Press Hall in the West Wing was filled with correspondents. It was obvious that many of our American colleagues had begun to shake free of the shame and shock of the first hours. In its place that special aura of professional sharpness could be scented that usually appears in journalists when they know they are covering events which will later be termed "historical".

The first duty of a White House reporter is to report the activities and actions of the President. Therefore, aspects of the tragedy were now taken over by others: there was the "Oswald angle" in Dallas; the "Kennedy angle" in the Washington suburb of Bethesda where an official post-mortem on the President was being held in the Naval Hospital and where Jacqueline remained.

So far the President had not manifested any signs of his, from that day on, independent political life. Therefore all of us had plenty of time to try and nab one of the presidential aides who now and then showed up in the press hall and to exchange information and

opinions on the meaning and significance of what had happened and was happening.

In the full sense of the word, only the TV people were working. They had set up their cameras on the lawn immediately in front of the door leading to the press department and every 20 or 30 minutes the TV commentators would make a broadcast, even though absolutely nothing was happening in the White House. Everybody was waiting for a possible first statement by Johnson and above all, for John Kennedy's final homecoming to his former residence which had now officially passed to his successor.

What were people talking about then in the press hall of the White House? The "Marxist killer" story — which swept over America from TV screens and over the rest of the world from "Voice of America" transmitters and American news agencies' teletypes — was discussed here, if at all, with reservations and ill-concealed disbelief. I do not wish to be misunderstood: Oswald, as the probable killer, did figure in our discussions, but he figured in another political context.

Perhaps Drew Pearson, the well-known columnist, most clearly expressed in an article the content of our first groping for the answer to "who?" Unlike the majority of his fellow-columnists (including those who only yesterday had proudly proclaimed they were "close to Kennedy") Pearson risked the following:

"If you study the history of American Presidents who have been assassinated, you find that most of these tragedies did not come about through the fanaticism of one man. They came about because powerful influence-molders in the Nation had preached disrespect and hate for the authority of the Government, and the man in the White House who symbolised Government."

Then Pearson went on to describe the now widely-known facts about how the ultra-Right "Dallas City Fathers" had greeted Kennedy and concluded: "The hatred-preachers got their man. They did not shoot him: they inspired the man or men who did it. It was a carefully planned assassination."

I think the following brief incident was typical of the prevailing mood among White House reporters at the time. Mr. Bryson Rash, a Washington television commentator, was conducting broadcasts from the White House. Just before one of his scheduled "five minute spots" he approached me and suggested I go on with him. Without waiting for a reply, he put an arm around my shoulders and began to lightly but firmly propel me in the direction of the cameras which were only some four or five feet away.

For me to have appeared on TV at the height of the anti-Soviet and anti-communist smear campaign could only have played

into their hands. My verbal refusal made no impression: Rash continued to push me toward the floodlit area and cameras. While I was trying to figure out how I could extricate myself without creating a scene, an American reporter I hardly knew spotted my predicament. He strode over and took Rash by the sleeve of his coat and in a loud, playful voice said:

"Hey, what's going on here... I never knew, Bryson, that you were on the same team as our super-patriots from Texas..."

My would-be interviewer went before the cameras alone.

So, when on November 24, Jack Ruby, operator of a strip-tease club and a man at home in the underworld and in Dallas police circles, shot and killed Oswald before the very eyes of America, belief in an "international factor" in Kennedy's assassination collapsed utterly. On the other hand, the question "who?" became ever more acute. In the Press Club people openly said: "This business stinks..."

In those stormy days Washington reporters discussed another subject at length besides the murder in Dallas. That subject was Lyndon Baines Johnson, 36th President of the United States of America. This was perfectly natural — everyone was concerned as to what course the country would now follow and under the American system much depends on the man who occupies the President's chair. However, such discussions really got underway later — after Kennedy's funeral. In the first days people compared the personal biographies and characteristics of the dead President and his successor, discussed the future of Kennedy's advisers and aides, talked about how Johnson had behaved after the shots and wondered what Robert Kennedy would do now, seeing that he and Johnson loathed each other (this was widely known in Washington).

As a rule, the former Vice-President did not come out too well in the comparisons. Of course, there were both objective and subjective reasons for this. The Washington press corps (I am referring to Americans) in its vast majority loved and respected John Kennedy.

When she learned of the death of the President, Mary McGrory of **The Washington Post** said to Arthur Schlesinger Jr., well-known historian and Special Assistant to Kennedy: "We'll never laugh again." Schlesinger replied: "Heavens, Mary. We'll laugh again. It's just that we'll never be young again."

Now, I think, it will be clear that the question: "Why did they leave Air Force One separately?" was not evoked simply by a desire to examine dirty linen, but carried serious political overtones. Well-informed reporters of the Washington jungles had correctly taken note of a seemingly insignificant fact as an indicator of things to come in connection

with the "crime of the century" and with the new President.

What had happened on board the Presidential plane in the journey from Dallas to Washington? The first information reached the press hall of the White House late on the night of November 22. It consisted of fragmentary details but the overall picture that emerged was this: The Kennedys and the Johnsons had a bitter quarrel over someone in the Kennedy party calling Johnson's take-over of the Presidential Office "an instantaneous usurpation of power" and his behaviour in relation to the dead President and his widow "indecent".

Here I want to describe only two incidents which in my opinion have a direct bearing on our questions: Who? How? Why? Although I must admit, that in the heat of the first days after the assassination, I and many other of my American and foreign colleagues thought that much else that we heard then and that was later factually confirmed also helped to answer these three main questions.

The first episode. Immediately after Lyndon Johnson's conversation with Malcolm Kilduff, when he put forward the "communist conspiracy" interpretation, he left Parkland Hospital and went aboard the AF-1 (and not the Vice-Presidential AF-2 on which he had arrived in Dallas). The widow of the President, his team of advisers and secretaries, arrived much later at the plane, quite unaware that the new President had already installed himself.

Johnson occupied the Presidential section of the jet and his first step was to try and find out how he could speed up tbe oath-taking procedure and therefore legally assume the powers of President of the United States. Johnson felt himself master of the situation. Later his aides, secretaries and guards unanimously agreed that his manner was confident and unflustered. Two Congressmen from the State of Texas whose opinions he asked, advised him to take the oath right away. Two others thought it would be better to wait until he arrived in Washington.

The new President decided on immediate action and gave orders that the Attorney General of the United States, Robert Kennedy, was to be reached.* Lyndon Johnson talked to Robert Kennedy by telephone from the bedroom of the assassinated President on board AF-1. The only one present at Johnson's end was Rufus Youngblood, his guard. Later Youngblood neither denied nor confirmed Johnson's version of the conversation — he pleaded "failing memory" and the fact that he had heard only one side of the talk.

* According to U S procedure, the Attorney General must approve the oath-taking ceremony before it takes place

The Attorney General spoke to Johnson in the presence of Edwin Guthman, a leading assistant in the Department of Justice. Guthman confirmed Robert Kennedy's version of the conversation. It went like this: After expressing the condolences appropriate to the occasion, Johnson passed on to the matter that interested him. The assassination, he said, "might be part of a world-wide plot".** Kennedy did not respond, as according to Manchester, "he was not among those who suspected a grand conspiracy, and he didn't understand what Johnson was talking about". Nevertheless, in his written statement to the Warren Commission, Johnson maintained that Robert Kennedy agreed with this interpretation and that they "discussed the practical problems at hand, problems of special urgency because we did not at that time have any information as to the motivations of the assassination or its possible implications."

Further Johnson said: "A lot of people down here think I should be sworn in right away. Do you have any objections to that?" ("A lot" — in fact, two out of the four that Johnson asked.)

Robert Kennedy said nothing.

"Congressman Albert Thomas," Johnson persisted, "thinks I should take the oath here."

Robert Kennedy still did not respond.

Then Johnson began to talk again about a "world-wide plot" and again silence was his only answer...

Only the following facts remain to be added to the story: in giving the necessary orders to make it possible to take the oath of office immediately (to summon a judge, invite reporters, hold up the plane departure) Johnson invariably mentioned that the "Attorney General advised me to take the oath here". However, when AF-1 landed at Andrews Air Force Base and Robert Kennedy went on board, someone queried him on the matter. He was extremely surprised and replied that he had said nothing of the kind to Johnson...

The second episode. The Presidential plane, with its four powerful jet engines, rapidly ate up the miles and approached the U.S. capital. Lyndon Johnson had successfully organised the swearing-in ceremony and now he had to handle one other piece of business: he had to talk to Rose Kennedy, mother of the dead President, and express his condolences. It was impossible to avoid: to have refused would have looked more than odd. He couldn't excuse himself on the basis of nervous exhaustion or anything else and most of all, it might have led to "all kinds of ideas". Besides which, all the passengers on board

** It must be remembered that this talk took place before Oswald's arrest.

that Boeing-707 had already noted that Johnson showed no visible signs of stress or nervousness.

So, there was no way out, he had to talk to Rose Kennedy. The President was handed the telephone receiver, and at the other end of the line waited the mother of John Kennedy. Lyndon Johnson covered the receiver with his big, fleshy palm. Now the President looked unnerved and extremely disconcerted. Without raising the instrument he said in a low voice: "What can I say to her?" At last, he forced himself and with difficulty pronounced: "I wish to God there was something I could do . . ."

Rose Kennedy's reply was significant by virtue of its double meaning. "We know," she said, "how much you loved Jack and how much Jack loved you."

"Here is Lady Bird," the new President hurriedly replied, and according to eye-witness acounts, thrust the telephone at his wife as though it was burning his hands unbearably. Lady Bird also spoke only one sentence and also a double-edged one: "Oh Mrs. Kennedy, we must all realise how fortunate the country was to have your son as long as it did."

Thus, two incidents on board AF-1. Each of them in my opinion significant, because they illuminate the main protagonists through their own actions and words which in such moments and circumstances as described can most frankly reveal the inner man — the one who is usually hidden from the gaze of others, and sometimes even from oneself.

What have we learned?

First of all, that Lyndon Johnson continued to spread the "communist plot" story put forward by himself before Oswald's arrest and even attempted to mislead the Warren Commission by depicting Robert Kennedy as holding the same views.

Secondly, for some reason, Johnson found conversation with the mother of the dead President unbearable, a conversation filled with double meanings. Why it was so double-edged will, I think, become clear when the real relations which had developed between Kennedy and Johnson by November 1963 are explored.

to be continued

In Our Next Issue:

DALLAS: Who? How?Why?,

continuation of notes by Mikhail Sagatelyan, a Soviet correspondent in Washington at the time of the Dallas tragedy.

Variant "B",

a novel by Daniil Granin

THE THIRD STAGE OF SURGERY

At the USSR Academy of Medical Sciences' Institute of Organ and Tissue Transplantation doctors are carrying out an operation coming within the province of the third stage of surgery.

by Olgerd LIBKIN
from the magazine KHIMIYA I ZHIZN (Chemistry and Life)

Today a reader seeing the word "transplant" immediately associates it with medicine. In the 1960s transplantation of human organs left the realm of theory and became surgical practice.

By 1970, nearly 200 heart transplant operations had been performed in the world and over 3,000 kidney transplant operations. The number is considerable and the general public might have been expected to lose interest in this medical sensation. That has not been the case, however. People are still fascinated by the subject.

This article deals with the tasks facing a new research institute set up in Moscow in 1969 — the Institute of Organ and Tissue Transplantation.

Dr. Igor Belichenko, deputy director of the Institute: "Surgery has gone through three stages in its history. In the first stage, surgical operations were limited to removing the diseased organ. Then medicine rose to a higher level: the diseased organ was not necessarily removed, if possible it was repaired. Now we have entered a new stage: the era of transplantation — replacement of the diseased organ by a healthy one. Our Institute is the first in the Soviet Union to be concerned with this type of surgery."

In Igor Belichenko's office there hangs a reproduction of a medieval painting which depicts the healers Kosma and Damian who, if legend is to be believed, were famed for their ability to transplant limbs.

But legend is legend and fact is fact.

The first scientific experiments with transplants were carried out by the British surgeon, Douglas Guthrie, at the beginning of this century. He attempted to transplant animal kidneys and hearts. It cannot be said that contemporaries were impressed by these and later attempts which yielded no practical results. It is not surprising that only now, when interest in the history of organ transplants is so high, long-forgotten names in the field are being resurrected.

In 1934 a Soviet surgeon named Yuri Voronoi tried to transplant a kidney, connecting it to the vessel system of the thigh. At the time little was known about tissue rejection and that attempt was doomed to failure.

For several decades transplant experiments have been taking place in the Soviet Union. Professor Vladimir Demikhov has been transplanting the hearts of dogs, together with lungs. Professor Nikolai Sinitsin has been

working with organs of cold-blooded creatures. Alexei Lapchinsky has been successfully transplanting limbs.

In 1965, in the Institute of Clinical and Experimental Surgery, headed by Dr. Boris Petrovsky, Member of the USSR Academy of Medical Sciences, a human kidney transplant operation was performed.

Dr. Yelena Potyomkina, head of the Department of Vascular Surgery and Kidney Transplantation: "Half of those who now die of uraemia — a toxic condition caused by renal failure — can be saved by a kidney transplant."

In sterile clothes from head to toe, masks over our faces, the nurse and I made a round of the department: wards, anaesthesia rooms, conditioners supplying sterile air to the operating theatre and the empty cubicle for post-transplant patients to which only a doctor and nurse have admittance. Finally we came to two rooms side by side: in one there is an artificial kidney machine, in the other, a patient reading a newspaper. The only reminder in the latter room of the apparatus next door is two white plastic hoses which stretch from the patient's bed to an opening in the wall.

When the kidney is unable to cope fully with the body's waste material, the patient can live for several years on a strict diet — impurities will be expelled

through the intestines and skin. But sooner or later this is not enough.

The change comes abruptly. The urea content in the blood can jump tenfold. The potassium content also increases and affects the heart to the point where it may stop beating. At this stage the artificial kidney machine enters the picture. The treatment is effective but inconvenient; the patient must report to the hospital every few days for a session with the machine. He cannot travel far for fear of consequences. Not only may mental health be affected. Frequent intrusions into a patient's inner processes can cause serious complications.

The only radical way out is a kidney transplant.

Dr. Yulia Zaretskaya, head of the Laboratory of Immunogenetics: "Today we know 17 systems of antigenes, and three of them are particularly powerful — it is essential that they coincide in donor and recipient."

This applies to all transplants, including those of kidney and heart. Neglect of the laws of immunity leads to sad consequences. Dr. Denton Cooley, a noted American surgeon, famous for his virtuoso technique, carried out 22 heart transplants without taking into consideration immunology, and all 22 patients have since died.

We are accustomed to the immunity which keeps away germs. But any transplanted tissue is subjected to the same processes as microbes: as chemically alien to the organism, it is rejected. All warm-blooded animals, including man, are able to assimilate alien proteins only through their stomachs and intestines, and only because in these organs the substances disintegrate into their components, aminoacids. Then every organism combines these components into proteins in its own way.

K. N.Tsatsanidi, senior research associate at the Institute, carries out an operation on the liver. A Department of Liver Surgery and Transplantation has been opened at the Institute.

Present at operations are not only doctors and medical students but also biochemists, physiologists and other scientists whose participation in the Institute's work is essential to the advancement of this new field of surgery.

But as soon as tissue gets into the organism in any other way, the antigenes responsible for rejection set to work. The lymphocytes produce antibodies, which move toward the place of transplantation and finally kill the transplanted cells.

The Laboratory of Immunogenetics studies the distribution of these 17 systems of antigenes among the population. In time, science will know as much about this question as it does about blood groups. But so far we know that three systems are powerful — but which of the other 14 can be neglected? Which should be given priority? Perhaps there are other, as yet undiscovered systems?

Be that as it may, every potential transplant patient, besides a host of analyses, has to be typed — immunologists determine his transplantation antigenes. Transplant is possible only when the main systems of antigenes in donor and recipient coincide.

Dr. Belichenko, deputy director: "The immunological characteristics of different individuals coincide very seldom. There is only one chance in 280 that the organ taken from a donor will suit a recipient. And it may happen that doctors will be unable to use the organ in their clinic. This is why it is vital to have an all-Union transplant coordinating centre. Our Institute will be such a centre."

The pooling of efforts, constant exchange of information

and mutual assistance between all kidney transplant clinics (later, heart transplant clinics as well) have become vital. In Moscow, such coordination has already been established between the Transplantation Institute, the Clinical and Experimental Surgery Institute and the Second Medical College, with its Urology Clinic. Kidney transplant centres already exist in Leningrad, Tartu, Novokuznetsk and Vilnius and will be established in other cities. What is necessary is countrywide coordination.

It can happen that 10 or 20 patients in a clinic are scheduled for transplant operations. They are periodically connected to the artificial kidney. Then they are discharged from the clinic only to be readmitted and kept waiting. There is still no suitable donor in their city according to data available to the medical staff.

But their information is incomplete. Special teams of doctors are on duty in the resuscitating section of the emergency ward of any hospital or clinic. Each team includes a forensic medical expert. They can remove an organ for transplanting only after the resuscitating doctor has failed to revive a patient and issues a death certificate. But how many such specialist teams can one hospital or clinic have? And (fortunately) reviving techniques have made marked progress in recent years. A unified, countrywide information service is essential.

To remove an organ is half the job. It must be delivered to the operating site in serviceable condition.

Dr. **Herman Lipovetsky,** head of the Laboratory of Experimental Surgery: "We have learned how to preserve a donor organ for several hours. If necessary it can be delivered by plane to another city."

The organ to be transplanted arrives at the clinic white as a sheet — after perfusion, the running of a nutrient colloidal solution through its vascular bed. But that is not enough! If the organ is not cooled the metabolic processes will proceed too quickly. So the washed kidney is delivered to the clinic in a special container filled with ice. There is another method of conservation — hyperbaric: if the oxygen pressure is raised, oxygen penetrates more easily into the tissue and so to speak, supports life in the organ.

An ideal solution will likely be a combination of these methods. But to achieve this ideal will require special apparatus, say, a higher pressure chamber with a thermostat and a system for continual washing of the organ. That is a problem for the engineers, not the surgeons. So besides biochemists, physiologists and medical men the Institute will employ designers.

Kidney transplants became possible in time only as a result of the colossal amount of experimental material accumulated. Until such time as there is a comparable accumulation of material on heart transplantation, Dr. Lipovetsky believes we have no right to start heart transplants in the clinic.

Over his table hangs a schedule of operations for every working day which gives the date, name of the donor-dog and recipient-dog, name of surgeon, assistant surgeon and anaesthetist.

These experimental operations on dogs take many hours and proceed according to all the rules of surgery. The task may appear simple: to develop surgical techniques of transplantation and to achieve harmony not only technically but also psychologically: a new team is in formation.

The Institute is also launching the study of what is known as immuno-depressants — substances which suppress the rejection mechanism.

But it should not be assumed that when the purely surgical and immunological difficulties have been overcome, transplants will be ordinary operations. It is not only the operation which presents difficulties. Transplantation, especially of the heart, is above all a severe traumatic experience.

Even in the future, when surgical instruments are improved and it has become possible, with the help of chemical and biological means, to prevent rejection, human heart transplants will be practised only when there is no other possibility of saving the patient's life.

Dr. **Belichenko,** deputy director: "Our clinic has departments for heart and lung surgery and liver transplants. This is a distant target: we are certain that transplantation of organs will be practised more frequently as time goes on."

The world already has some experience in lung transplantation. As for liver transplants, the few operations performed have so far ended in failure.

But reconstructive liver operations are proceeding well, including ones in the clinic of the Transplantation Institute. An artificial liver apparatus has yet to be created, so while the operation proceeds, the isolated liver of an animal, usually a pig — it resembles the human liver more than any other — is connected to the patient's bloodstream. Scientists are trying to establish the laws governing such operations. At first the simplest. They want to discover, for instance, how long an organism can function with another person's liver.

The development of transplantation does not mean that old surgical methods will be forgotten, but Dr. Belichenko believes in the extremely broad possibilities inherent in the third stage of surgery.

from the Soviet PRESS

HEIRS TO LOBACHEVSKY

Russian Mathematics–Past and Present

Youth is a tremendous factor for success in mathematics. Talent is also necessary, of course, but in itself it is not enough.

It is youth plus talent plus a favourable intellectual climate that produces brilliant mathematicians. Today in the Soviet Union those favourable conditions are being provided and the results are making themselves felt.

"The young Soviet mathematicians deserve top praise, and they have a great future, too," Dr. Henri Paul Cartan, President of the International Mathematical Union, said in 1966.

This article tells of some developments in Soviet mathematics today.

In 1967 Dr. Sergei Novikov and Dr. Yuri Manin, of the Steklov Institute of Mathematics in Moscow, won Lenin Prizes. Dr. Novikov was honoured for a series of papers on differential manifolds, published in 1964—66, and Dr. Manin, for a series of papers on the theory of algebraic curves and Abelian manifolds, published in 1959—63. The former, a corresponding member of the USSR Academy of Sciences, was then only 28 years old. The latter, holder of a doctorate in physics and mathematics, was 30. A few years earlier, in 1965, Dr. Vladimir Arnold, a 28-year-old professor of Moscow University, was awarded a Lenin Prize for his monograph, **Ergodic Problems of Classical Mechanics,** which was reprinted in 1967 in Paris and in 1968 in New York. Obviously, world recognition followed years of research — in other words, all three did research when they were still very young mathematicians.

Many have commented on the contrast — such youthfulness in actual age and such maturity in mathematical theory! Of course this is something outstanding. But only because brilliance itself is outstanding, a rarity. But the most favourable time for its manifestation is the third decade of human life. This has always been the case.

Some commentators lay stress on the complexity of the problems solved by these young men — problems relating to abstract spheres of science which seem of an absolutely recondite character to the layman. The interests of these prize-winners, journalists point out, lay in fields which promised far less popularity and general recognition than, say, technical invention.

But in this our contemporaries are following in the footsteps of their predecessors, nineteenth-century Russian mathematicians of Lobachevsky's time.

Meanwhile, the achievements of young Soviet mathematicians reflect the difference between this century and last.

Talent Plus Proper Conditions

Speaking about those scientists to whom the Russian school of mathematics owes its world reputation, Dr. Sergei Vavilov, former President of the USSR Academy of Sciences, mentioned geometer Nikolai Lobachevsky (1793—1856), whom British mathematician William Clifford called the "Copernicus of geometry".

Lobachevsky revealed his outstanding abilities at an early age. At 14 he entered Kazan University. At 18, he earned the title of Master of Science, proving himself one of the finest of the university's scholars. At 23 he became a professor, and at 34 rector of Kazan University.

Lobachevsky's biography is, in a certain sense, ordinary: the ordinary thing about it was his youth — the golden age for the creative scientist. At the same time his scientific career was by no means typical for czarist Russia, where the flowering of mathematical talents, of which Russia always had many, was a matter of luck.

In the period preceding the October 1917 Socialist revolution, St. Petersburg and Moscow Universities and two or three other Russian higher schools were turning out a few dozen mathematicians a year — one hundredth of the number trained now. And that was intended for

the whole of Russia, with her 150-million population. Far from all of them devoted themselves to research.

Some, mostly sons of the well-to-do, gave up mathematics altogether. Others swelled Russia's already bulky bureaucratic apparatus, in which, even if they became excise officers and dealt with taxes and economic statistics, they needed only the rudiments of the knowledge acquired at their college or university courses. Only the few select were left to reach the level of professorship. And still fewer of those who gained the title of professor combined lecturing with scientific research.

Of course, scientific progress was not stopped even then. But its chief source was the drive of scientists who, more often than not, depended for support either on their own private means or on rich patrons.

* * *

"What is new about the position of science in Soviet times is above all the basically new approach of the government to the role of scientific research in the life of the state," Dr. Vavilov pointed out. "In the very first months after the advent of Soviet power scientists felt that science had entered an absolutely new phase of its evolution. In the Soviet socialist state it ceased to be a private or "philanthropic" public undertaking. It was increasingly becoming a cause of state importance, to which the Soviet government and Communist Party gave particular attention."

Specifically of mathematics, the President said: "Russian mathematics has held a leading place in world science from the beginning of the nineteenth century but it never reached the scope, diversity or profundity which characterise it in Soviet times.

Our mathematicians have achieved remarkably original results, notably Dr. Ivan Vinogradov, who works on the theory of numbers. Of great importance for mathematics, physics, statistics and engineering, including military engineering, are the works of Dr. Sergei Bernstein, Dr. Andrei Kolmogorov and Dr. Alexander Khinchin on the probability theory. Many results of practical importance have been achieved by Soviet analysts working on the theory of differential equations. Among the long list of brilliant works in this field mention should be made of investigations done by Dr. Ivan Petrovsky, Dr. Sergei Sobolev, Dr. Vladimir Smirnov and many other scientists. Dr. Pavel Alexandrov has broken new ground in topology."

The youngest of the mathematicians mentioned by the President, Dr. Sobolev (b. 1908), was elected corresponding member of the Academy at 25, and a mere three years later became a full member. Now he is director of the mathematics Institute at Akademgorodok — "Science Town" — near Novosibirsk.

Like the President of the Academy's Siberian Branch, Dr. Mikhail Lavrentyev, another distinguished mathematician and Vice-President of the USSR Academy of Sciences, Dr. Sobolev is an enthusiastic supporter of new teaching methods aimed at discovering mathematical talent at an early age and at creating the best conditions for cultivating it.

These methods also have state support.

* * *

For many years there have been annual all-USSR physics and maths competitions for secondary school pupils. This is one way of bringing out at an early age the aptitudes and inclinations of those who will later be eager to go on to university or college.

Boys and girls who show outstanding ability can transfer from an ordinary school to one which places the accent on physics and mathematics. Such schools exist in Moscow, Leningrad, Novosibirsk, Kiev, Tbilisi, Dushambe and other cities.

So when there are such facilities for discovering mathematical gifts on a mass scale it is quite an ordinary matter that they should be displayed at an early age. It is amazing only inasmuch as talent is amazing in itself, notably such talent as that possessed by Novikov, Manin and Arnold.

True enough, these three scientists became mathematicians in the 1950s, when there were no all-USSR competitions and no schools with the accent on physics and mathematics. But the search for mathematical talent went on in those years, too, though on a smaller scale. Schools had physics-and-maths clubs, and competitions on a city scale were an institution even before the war.

It was in a Moscow competition that Arnold's talent came to light. Not surprisingly, in his university days, he became a pupil of mathematician No. 1, Professor Kolmogorov, who with other mathematicians, had for a long time been engaged in a search for talented youngsters and helping with their training. (Now Dr. Kolmogorov is, among other things, chairman of the USSR Academy of Sciences Commission for Mathematical Training).

Dr. Manin's talent was also noticed in his school years. At university he was conducting independent research.

Speaking of the successes of young Soviet mathematicians, Dr. Ivan Vinogradov, director of the Steklov Institute of which Dr. Novikov and Dr. Manin are associates, observed: "I am not saying this in order to surprise the reader: it is common know-

ledge that mathematicians, like theoretical physicists, usually achieve creative maturity at 25-30. The fact that more and more young mathematicians are coming to the fore and gradually taking over responsibility for the progress of science shows that the training of first-class researchers has more or less recovered from the terrible consequences of the war."

To that one can only add that now, when all-USSR contests are being held, when many cities have opened schools with intensified training in physics and mathematics, when every year increases the number of entrants to mathematics dapartments of colleges and universities (at the universities these dapartments are now among the largest) the ranks of Soviet mathematicians are receiving increasingly numerous and promising reinforcements. It is the surest guarantee of further, still more important advances.

Choosing a Field

At present 90 per cent of the mathematicians the Soviet Union needs are applied mathematicians. This does not mean, however, that pure research, of which no immediate practical application is expected, has lost its value, or ever will.

While giving special attention to the development of applied mathematics, the Soviet state is doing everything possible to stimulate theoretical research, which does not always (at any rate, not always quickly) bring immediate benefits to the national economy but leads to discoveries which make a big contribution to scientific progress.

Dr. Novikov has chosen topology as his field. It is referred to as 'rubber' geometry: the spatial forms in it are conceived as devoid of their customary rigidity and viewed as flexible and elastic. That makes the circle, the square and the triangle equivalent: assuming that their outlines are elastic, they can be transformed into one another easily and without discontinuity.

"What is all this in aid of?" the reader may ask.

In an article, **The Practical Value of Abstraction,** published in the weekly **Nedelya,** Dr. Boris Gnedenko, a member of the Ukrainian Academy of Sciences, says: "Sometimes mathematics is called the 'queen of sciences', sometimes people try to make it the servant of practical needs. Neither is justified. If mathematics becomes a 'queen' and turns its back upon practical requirements it will degenerate into a science remote from human needs. If it does nothing but meet the requirements of the day it will cease to play its basic role — of creating general techniques which can be used in the solution of a wide range of problems."

Topology is one of those branches of mathematical disciplines, which is playing this basic role.

* * *

Topology became established in the present sense of the word comparatively recently, due, above all, to the French mathematician Henri Poincaré (1854—1912). The first significant results were obtained in the 1920s by Dr. Pavel Alexandrov, Dr. Andrei Tikhonov and Dr. Pavel Uryson.

Its top prewar achievement was the discovery, by Dr. Lev Pontryagin, a member of the USSR Academy of Sciences, of what is known as the principle of duality. This meant not only a step forward for topology but for the whole of twentieth-century mathematics.

Toward the mid-1940s the Soviet Union developed one of the world's best schools of topology.

Up to the end of the 1940s Soviet and to a great extent world topology was vastly influenced by the ideas of Dr. Pontryagin, whose works are regarded as classics. Incidentally, this eminent scientist is blind, due to an accident in childhood. However, he has achieved world renown and developed a whole galaxy of pupils and followers.

Toward the end of the 1940s, however, Soviet topologists lost leadership to their French and other Western counterparts, whose ideas proved extremely promising. French mathematicians led the way in topology throughout the 1950s, after which the British and American schools took over.

The Soviet researchers lagged behind. What was more, they developed a kind of psychological barrier and tended to avoid the central topological problems for fear of wasting a great deal of effort on parallel research.

Comparatively recently, Soviet mathematicians pulled out of this slough of despond, and have been making a worthy contribution in all the main fields of modern topology. The most important advance of the last decade is associated with the name of Dr. Sergei Novikov.

Though extremely abstract, the problem he solved bears relevance to the applied sciences, including the theory of differential equations, which forms the basis of many engineering calculations.

* * *

Dr. Manin's present work is difficult to ascribe to any particular field of mathematics — it defies traditional classification, blazing trails into an unexplored science which is only beginning to take shape and so far has no name. It is a borderline area between algebra and geometry, which is concerned with curves expressed by algebraic equations and, as Dr. Vinogradov says, conceals many key problems of both

theoretical and practical mathematics.

The same thing applies to the theme chosen by Dr. Arnold. Lying between mathematics and mechanics, it offers no immediate practical gain. But an outlet into a practical field is in the offing here, too.

Soviet mathematicians, like other Soviet scientists, have full freedom in choosing the field of research to which they can apply their talents to the best advantage.

When Dr. Pontryagin took up problems of optimum control of production processes (in our days they are of primary practical importance), which are remote from topology, the scientist was, naturally, motivated not only by his own scientific interests but also by the needs of society. However, this turn to a new sphere was the scientist's own decision — Dr. Pontryagin was under no pressure to take up these new problems. There was great public interest and discussion of Dr. Pontryagin's works when they were published, after which he was awarded a Lenin Prize in 1962.

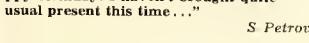
In 1965 a Lenin Prize went to Dr. Kolmogorov — for the research he did jointly with Dr. Arnold, which also promises practical results, though not immediate ones. Dr. Kolmogorov then told journalists: "I remain basically a pure mathematician. While admiring mathematicians who have won positions of prominence in our engineering science, and being fully aware of the importance of computers and cybernetics for the future of mankind, I believe, however, that pure mathematics in its traditional aspect retains its place of honour among the sciences."

However remote from practical uses, however abstract and difficult to the layman's comprehension may appear the problems our scientists are working on, they enjoy the full understanding and generous material support of society. Public recognition of success has many forms: one is annual Lenin and state prizes.

The state institutions for the coordination of science throughout the USSR base their recommendations on expert opinion. So the individual and collective programmes of research are, in the last analysis, proposed by the scientists themselves.

The current epoch in Russian mathematics in which the state, interested in scientific and technical progress, does everything to stimulate both applied and theoretical investigations, and in which favourable conditions are created for the discovery and encouragement of future Lobachevskys, is an epoch of great vistas and high hopes for Russian mathematics, whose glory has already been added to and will be increased still more in Soviet times.

HUMOUR



"Happy birthday! I haven't brought quite the usual present this time . . ."

S. Petrov

Service for lovers.

A. Streltsov

"Sh-sh-sh! Yura's practising his music."

N. Efendiyev

"But it's my hobby—blots!"

L. Morosova

Letters to the Editor

Continued from p. 3

and may a union republic secede from the USSR?

Claude Berger,
Ottawa, Canada

A union republic is a national and sovereign Soviet socialist state of workers and peasants. It bears the name of the people inhabiting its territory and composing the majority of the local population. The union republics differ considerably from one another in area, in number, density and ethnic composition of population. They all have equal rights, however, in the free Union of Soviet Socialist Republics.

Each union republic has its own constitution, which takes into account the special features of the republic and is in complete accordance with the Constitution of the USSR; it also has its own civil, criminal and labour codes, its own laws on marriage and the family, on citizenship, etc.

The territory of a union republic may not be altered without its agreement. Each republic has the right to enter into direct relations with a foreign state, to conclude agreements with it and to exchange diplomatic and consular representatives.

Within its own territory, the union republic exercises state power on an independent basis.

Each republic has its own organs of supreme state power: the Supreme Soviet (supreme legislative body), the Presidium of the Supreme Soviet, the Council of Ministers (highest organ of the executive), the Supreme Court, and also local organs of state power — Soviets of working people's deputies and their executive committees.

Each union republic has equal rights in the administration of the Union of Soviet Socialist Republics.

Each union republic, regardless of the size of its population, has the same number of representatives in the Soviet of Nationalities in the USSR Supreme Soviet — 32 deputies; in the Presidium of the Supreme Soviet, which has 15 deputy chairmen — one for each republic; in the Council of Ministers of the USSR, on which sit the chairmen of the councils of ministers of the union republics, in the Supreme Court of the USSR, on which sit the chairmen of the supreme courts of the union republics.

Each republic retains the right of free secession from the USSR. This right is laid down in the Constitution of the USSR and the constitutions of the union republics.

The Editor

In the October 1970 issue of SPUTNIK you have an article about the communications sputnik, Molniya-1, by which Moscow television programmes can be relayed to Vladivostok and other cities remote from the capital. But there is a more than six hours time gap between Moscow and Vladivostok. I suppose people in Vladivostok will not be able to see all the Moscow telecasts — they must be asleep a great deal of the time.

Kazimierz Szliszka,
Ostroda, Poland

We should like to know which parts of the Soviet Union do not receive telecasts through Molniya-1, and what is the explanation for this.

Thomas Bernstein, Lutzen,
German Democratic Republic

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As was stated in the article ORBITA: SOVIET SYSTEM OF COSMOVISION (October, 1970), the Orbita system consists of two basic elements: the relay sputnik, Molniya-1, and the Orbita ground relay systems.

The sputnik Molniya-1 covers practically the entire territory of the USSR, with the exception of a few sparsely populated areas in the Far North. The range of each of the ground stations is a little more than 100 kilometres (60 miles). Beyond that distance a broadcast cannot, of course, be received. Nevertheless, the majority of the population (70 per cent) are now able to get Moscow programmes on their TV sets.

There are now Orbita stations in more than 30 republican and regional centres and other towns and urban settlements (including the Far North of the European and Asian parts of the USSR, Siberia and the Far East). More stations are being constructed in the remotest parts of the country. In January this year, for instance, the first ground station in the Far North-East was put into operation. The second such station is being built at Anadyr (a port on the Bering Sea), and it will be completed this year. The construction of a relay system is also planned, and when that is in commission the majority of Chukotka's inhabitants will be able to look in to Moscow.

The Orbita system not only covers the territory of the USSR, but Mongolia, too.

A large part of the European territory of the Soviet Union does not receive transmission through Molniya-1, but this is only because there would be no point in it. Here radio-relay and cable lines are used. There are also direct radio-relay communications from Moscow to Novosibirsk, but in this case it is parallel with cosmovision.

As regards the time difference, this does, of course, make it a little more complicated to organise transmissions to Vladivostok and other remote places. Consequently Moscow TV has a special programme department called "Orbita", which draws up its schedule with account for time differences. At the weekend the Orbita department starts functioning at 8 a.m. Moscow time, and on weekdays at 9 a.m., so that in Vladivostok, for example, the programmes may be received in the afternoon. The department finishes work at 21.30 Moscow time. A special block of programmes is compiled from recordings taken from Moscow TV's four channels, but, of course, in exceptional cases, the transmission is live — for example, if there is a major sporting event. Then keen fans will rise from their beds at unearthly hours to sit in suspense before the screen — even though they could watch a film of it next day in comfort.

The Editor

I am a student, and I am always very interested to read articles in SPUTNIK about Soviet students. Unfortunately there are not many of them. Your November 1970 issue contained an article entitled "Students". It was well illustrated, but the facts given in it, although interesting in themselves, were presented rather drily, like something in an encyclopaedia. I should like to hear more details about the life of students in the USSR, to learn how the student organisations function, what their problems are, how students spend their spare time, etc. And it would be very good if this information could all be given in a lively way, for example in the form of a reportage.

Elżbieta Waliślak, Kalisz, Poland

by Mikhail ALEXEYEV

Bread is a Substantive

Mikhail Alexeyev, born in 1918 in a peasant family, started writing while in the armed forces, where he served between 1938 and 1955. During the Second World War, Alexeyev was a political commissar in the army and then a war correspondent. After retiring from the army with the rank of Lieutenant Colonel, Alexeyev completed the Higher Literary Courses of the Soviet Writers' Union.
Before the publication in 1961 of his novel, "Cherry-Tree Pool" Alexeyev was considered a war writer — "Soldiers" (1953", "Division" (1959), and others. But all his later work was about the life of the countryside, village people and their problems.
"Bread is a Substantive", which we present in condensed form, has been made into a film called "Zhuravushka"

Every village, big or small, has its people, a sort of "cast of characters", who lend it a special quality, an image and a soul of its own. Without this "cast", the place would be impossible to imagine.

It is a village like this, and people like this, that my story is about.

Mikhail Alexeyev

Kaplya

Kaplya is what they called him, but his real name was Kuzma Nikiforovich Udaltsov, and he was eighty years old.

Why Kaplya?

Well, that I'll tell you in time, but first let me describe him to you. He had been short and slight to begin with, but now, what with one thing and another — his life had been a long one, and not exactly sweet — he was bent down nearly to the ground. If he happened to meet anyone and wanted to stop and pass the time of day, Kaplya would have to twist his neck around in the damnest way to see with his little, black, squinting, shortsighted eyes who it was he was talking to.

"It's not you, is it, neighbour?" he would often asked Sergei Volgushov who had been his friend since boyhood. They had gone off together on the same day to do their army service, had fought side by side in the first German war, had both left their posts when the opportunity presented itself, had fought together in the Civil War after the revolution, been wounded on the same day, lain side by side in the same hospital and returned together to their native Vyselki, where their wives awaited them with both broods of children and a ruined farm apiece.

Kaplya had been in a hurry to get home. He wanted to see Bukhar, the one-humped camel he had bought the other side of the Volga just before leaving for the Civil War. Before that, Kaplya had had a bay mare called Maruska, who had been gifted with tremendous endurance and never seemed to need much, remaining rounded and sleek on any sort of feed at all. True, she had one bad habit — she used to bite. Or so they had been saying, but for a long time, Kaplya refused to believe it. Whenever his wife or one of the children complained, Kaplya would grin smugly and ask:

"Well, why doesn't she ever bite me?"

"You just wait, she will!"

His wife was right.

Once, when Kaplya was returning home some time past midnight, he went up to Maruska, as was his custom, and began affectionately slapping her on the rump. He then

decided to give Maruska a kiss on her big soft, velvety lips. But Kaplya was at the moment rather well pickled, as the saying goes, and he simply was not aware that Maruska, unlike his meek and uncomplaining wife, could not bear the smell of spirits. As his face approached Maruska's muzzle, lips extended and murmuring endearments, the mare suddenly bared her teeth, her red eye glinting savagely, and she gave her master a painful bite on the shoulder. Kaplya let out a howl and with a violent jerk wrenched a stake out of the fence (wherever did he get the strength?) and proceeded to chase the horse about the yard till he could run no longer. In the morning, though he avoided looking his wife and children in the eye, he nevertheless felt them smiling behind his back. Dressing quickly, he went out into the yard, harnessed Maruska to the big sledge and went off somewhere.

It was two full weeks before he returned, and instead of Maruska, there was some sort of monster harnessed to the sleigh. At the sight of it, all the dogs in the neighbourhood set up a frantic barking, while women out to fetch water crossed themselves just in case. The frightful creature turned out to be a camel with excessively long legs and a neck to match. From the little head perched on top of the neck came a constant stream of saliva and some sort of vicious invective, so that neither Kaplya's wife nor any of his children would venture out of the house for several days.

Kaplya, however, was inordinately pleased with the animal, and with himself as well. He would stand at the foot of this walking belfry and look up at it, beaming.

"Lie down, Bukhar!" he commanded, and the camel, after a long moment, did so. With exclamations, spitting, and horrible faces, but he did it.

The camel had phenomenal speed — no horse in the area could compete with him.

"It was all over that accursed camel that I didn't become a general!" Kaplya once asserted.

"What do you mean?"

"Just what I say. Grishka Liakhin did and I didn't. And all because of that camel . . ."

It was only after numerous requests to tell the whole story that Kaplya complied.

When the Civil War ended, he related, the commander of the regiment summoned Kaplya and suggested that he come to Moscow and enrol in the school for Red Army commanders. Four years of primary education was required, an achievement not to be sneezed at in those days, and Kaplya had it, as did one other man from his company, Grishka Liakhin. Furthermore, both of them, it appeared, were keen-witted and brave. Grishka agreed on the spot, but Kaplya flatly refused. How could he go when Bukhar was waiting for him at home in Vyselki? And that was how it

happened that Grishka Liakhin rose to become a general while Kuzma Udaltsov, who seemed cut out to be a leader of men, even lost his own name and became Kaplya ("a drop").

Why Kaplya? Well, actually Kuzma got this nickname many years later, in fact right after the end of the Second World War. One collective farm chairman had the odd idea of appointing the best field worker on the farm (this was Kuzma) bee-keeper, to replace the old bee-keeper, who had grown so lazy he did not even steal the honey any more.

The reason Kuzma was selected was that he was absolutely honest, never taking any of the collective farm products for his own use, as some of his fellow-villagers were wont to do.

"Honey is sweet, and man has a sweet tooth," said the farm chairman significantly. Kuzma took over the bee farm, and the chairman solemnly presented him with a book on bee-keeping.

"This," he said, "is the bee-keeper's bible. Your job is to read it day and night until you have it all down pat. And let's not hear of one little bee giving up the ghost! Is that clear?"

"Yes," said Kuzma, taking the "bible". But there was hardly a chance to open it before he had his first visitor, a local dignitary of some sort who, it seemed, had a consuming interest in apiaries. Instead of frankly admitting he had come for a nice dish of honey, he assumed an air of great importance and began examining the new bee-keeper in the fundamentals of apiculture.

"Have you many drones?" was the first question, which he accompanied with a scowl of disapproval.

Kuzma was not happy, he did not have a ready answer to this unexpected, but seemingly reasonable query. He even felt a slight itch between the shoulder blades, and it was then that he got his inspiration.

'Aha!' he thought. 'Drones . . . *that's* what they call the pesky things. Those scientist fellows have a language of their own,' decided the old man, remembering his constant but unwelcome companions of the trenches.

"Well," he replied, "there *were* quite a few. No use hiding the fact."

"And what did you do about them?"

"Well, we used to just squash them with the finger nails! . . ."

There was a roar of laughter as the dignitary understood.

"Look here, Grandpa. I haven't time for all this. They need me in the fields. How about a drop of honey, just a taste?"

Kuzma gave him some. And from that time on, it was a drop for one and a drop for another, until Kuzma began to wonder if this was not the sum total of his duties as bee-keeper. And that's how he got the name of Kaplya, which replaced his real name of Kuzma Udaltsov.

The Postmaster

His name was Zulin, Nikolai Evseyevich Zulin. The surname was not a long one, as surnames go, but to his fellow villagers, who were incorrigibly fond of nicknames or of converting real names to suit their own taste it probably seemed a trifle long, and they decided to remedy this. The result was "Zulya", and that's what everybody in Vyselki called him from then on.

"Go and ask Zulya for a saw," a father might tell his son. "Where have you been?!" asks an irate wife. "At Zulya's", comes the ready reply, for as any husband knows, that rules out any suspicion of possible wrongdoing. "Where did you hear *that?*" If the answer is "from Zulya", utter disbelief is replaced by total conviction. So that's what Zulya was like.

When Zulya came home from the war he had one arm, the left one, instead of two. Also he had a wife and four children. Before the war Zulya was a carpenter and joiner, and doubled as a cooper if the necessity arose. But his main occupation was carpentry, and a better carpenter was not to be found in the village. Zulya knew he was good and so he did not want to abandon his chosen trade even after the war had dealt his right arm such an inconsiderate blow.

The problem now was to retrain the left arm so that it could serve as both the right and the left simultaneously.

After a month Zulya was able to mow grass with a scythe, the left arm acting in lieu of the right, while the role of the left was taken over by his neck, to which the scythe was strapped or tied.

The soldiers' wives, who had long since mastered all the masculine trades, would watch this amazing reaper at work and secretly envy Zulya's wife. *She* wouldn't have to do the mowing herself. Had they been more observant they might have noticed what an inhuman effort was required of the disabled Zulya to do this work. Coming to the end of the row, he would lurch and fall back on the newly mown grass, writhing from the unbearable pain that wracked his body, which felt as if it had been cruelly beaten — and only the chirring of the grasshoppers and the trill of the larks in the deep blue sky could help allay the pain a bit. Having lain thus for half an hour, he would begin to roll a cigarette. Now fashioning a hand-rolled cigarette with one hand is quite a job, but this Zulya had mastered with relative ease, as he had a multitude of other things, which when you have two hands are no trouble at all — you do them without thinking, automatically, the same way as breathing, eating and drinking but which for a one-armed cripple present difficulties that are all but insuperable.

The hardest thing for Zulya was his carpentry, the very work for

which he had been born on God's earth to do!

Out in the shed he had converted into a workshop were his workbench, his planes, his chisel, gauge, several gimlets and a well-sharpened axe. He would go out to his shed at sun-up and would not return until dark, and then it would be hard to recognize Zulya. His face was gaunt and dark and haggard; his sunken eyes were full of boundless misery, and sometimes there were tears in them, too.

"What's wrong?" his anxious wife would ask.

"Nothing."

He would say only this and in the morning, out he would go again to the shed, or workshop, I should say.

One evening he did not come out. Through the crack under the door shone the dim light of the small "bat" lantern he had taken in with him. Neither his wife nor his children ventured to peep into the shed. They knew it might provoke an outburst from Zulya. He had never liked to be interrupted at his work, and now he liked it even less.

Some time after six in the morning Zulya returned to the house. He walked to the table and for a long time was immersed in trying to roll a cigarette. He was not succeeding very well, but this did not irritate him as it usually did. He did not berate his wife and children, not did he begin a tirade against the farm management — this generally included everybody from the chairman to the head of the carpenters' work-team. He merely worked on quietly, concentrating on getting the crude shag wrapped in the piece of newspaper and breathing hard until he had finally completed his cigarette, which came out enormous. Now he smoked in silence, staring at the frozen window-pane, as if there were something there others could not see. In one corner of his hard lips, dark from the cold, in the place where they held the cigarette, there lurked a barely perceptible smile.

Taking one last drag, Zulya suddenly rose from his bench and turning to his wife, said in a low, solemn, somewhat mysterious voice:

"Mother, don't go out anywhere, I'll be right back."

In a moment he returned carrying a new stool. Setting it down in the middle of the room he stepped aside and glancing first at his creation and then at his family, he said:

"Well?"

There was fear and a silent appeal in his eyes as he regarded his wife and children — stern, implacable judges about to pronounce the fateful verdict on which the rest of his life depended.

"Well, what do you think?" he repeated impatiently, his voice hoarse. He walked up to the stool again and touched it with a shaking hand.

Zulya's wife said nothing but burst into tears. Then one by one, like peas into a pan, the children

dropped off the stove, and one by one tried out their father's stool.

The result of his labours was rough and crude — that much would be apparent to anyone who saw it, except Zulya himself. At that moment, looking at the children playing about beside it, and his wife who had tears of joy in her tired-looking and nearly always sorrowful eyes, Zulya was perhaps the happiest man on earth.

After that he made a frame for the family photographs, several new window frames for the school, a butter churn for his wife, then a small barrel, and finally, at the request of his neighbour Marfa, whom people called Zhuravushka, a real bentwood chair witb a coquettishly curved back. When he brought it to her house, he asked with a twinkle:

"Who's going to have the honour?"

"You never know, it might even be you!" said Zhuravushka. Zulya hastily took his leave of the proud and mischievous little woman.

The chair with which the one-armed carpenter had taken such pains caused his wife to increase her vigilance over their wedded bliss. From that time on, she unfailingly accompanied her husband to the carpentry shop in the village and at noon went to meet him and escort him right back to their house again.

Driven to the verge of despair by this unexpected display of jealousy, Zulya seriously considered taking the bentwood chair back again, but he was deterred when he remembered the glass of home-brew Zhuravushka had given him at the time the deal was made and the still bigger one he got when he delivered the goods.

More vigilant now than ever before, Zulya's wife probably noticed something that Zulya himself did not see. Short-legged, long-nosed, one-armed — he was not a handsome man by any standards, but if he had had the time to look about him, instead of keeping his eyes glued to his work, which is all he did do since he regained his skill, he would have made an unexpected discovery — he would have noticed that now, just as before the war, he held a definite appeal for women. When they came to Zulya with their orders, many of them would cast a long, wistful look at him as he sat at his bench.

However, since he did not notice any of this, as he did not notice either his wife's black looks or the chatter of the gossips, Zulya continued to take orders, and mostly from the soldiers' widows. He would repair a tub for one, a window frame for another, a bench, a floor, or a kneading trough. But he never took any money, only a glass of something if it was offered.

But as the years passed, Zulya's arm began to weaken under the pressure of too much work, of which there was enough for two good arms, and he could no longer hold the axe for more than three minutes at a time.

He did his utmost to conceal the fact from the team leader, and from his mates. He took more and more frequent breaks to smoke, and the rest-periods grew longer and longer.

The team-leader and the other carpenters understood his trouble, but gave no sign: they were sorry for Zulya. When the time came he would speak up himself. The time was not long in coming.

"I can't do it any more, Pashka," said Zulya to tbe team-leader. "I'm through. It takes all I have just to carry my food to my mouth... Only who's going to earn it for me now?...

He picked up his axe in the crook of his arm, and with a look of doom, left the workshop.

For three days running he drank furiously, wreaking vengeance on his own infirmity. On the fourth day, he went to the farm office.

"Well, what do you want me to do?"

"We'd like to make you postman, Zulya."

"What?!"

"Postman."

"Me?!"

"Yes."

"Couldn't you think of anything worse?"

At this point, old man Kaplya, who happened to be in the office, intervened.

"Keep your hair on, Zulya. Do you know what they called a postman in the old days? A post-meister, that's what! Post-master, get it? So there! Before you were a master of joinery, now you'll be... ...that..."

"Oh, go to hell, Kaplya!" Zulya, choking with fury and bitter resentment turned on his heel, and walked out, banging the door savagely. He returned home and drank for three more days.

Sobered up again, Zulya went straight to the post office.

"All right, give me the bag."

The first few days at the new job were very trying. Zulya was ashamed. He would deliver letters and newspapers only after dark and that meant noisy encounters with dogs in almost every yard until they become accustomed to the new postman.

With time, however, he got used to it, and later even found it to his liking. It was good to be there and feel the warmth of other people's joy when he brought good news from a son or daughter who had left the parental nest and now lived somewhere in Siberia, the Far East, or the Urals. And when he happened to bring bad news, it was also quite in order to give people a moral boost with an encouraging or a soothing word — he had always a store of them for such cases.

Zulya knew ahead of time what news he was bringing in his old canvas bag, because he had read all the letters already. And he was guided by purely humanitarian motives.

Zulya took pride in being a kind of liaison man between

human hearts, and how could he fulfill the purpose if he was not properly informed of the contents of the letters he delivered? For a piece of bad news could take a person unawares, might even kill him! But Zulya, who knew all about it, would be there to cushion the blow.

It often happens that people make trouble for themselves and do all sorts of foolish things unless they are given good advice.

Everybody in Vyselki knew about this frailty of Zulya's, but somehow they could not hold it against him. There was no harm done in his knowing about other people's affairs and after all it was his job as post-master to introduce all sorts of improvements.

If anyone had told Zulya that what he was doing was against the law, he would probably not have understood, because he always considered that the only things that were illegal were those that harmed people. His own behaviour only helped others, so therefore it was perfectly legal.

And that's the way it goes!

Apollon Stishnoi

To set the record straight, Apollon Stishnoi did not look a bit like Apollo Belvedere. His most distinctive feature was his height. At 7 foot 3, he might have qualified for any basketball team in the world; it's a pity some coach did not meet him earlier. But the good Lord did not see fit to provide any breadth to speak of — all the building material seemed to have been used up to achieve altitude. Apollon's head floated somewhere up so high that it tended to look somewhat smaller than the ordinary run of heads. And when he spread his legs Kaplya could easily pass between them without so much as hunching his shoulders, and this trick they often performed at the local clubhouse.

It is said that his parents, who were well-read, gave him this name to be different, in some way at least, from their fellow villagers.

And although Apollon was not handsome, he seemed to charm the village girls — all girls like long-legged men anyway. Fellows of medium height, to say nothing of really short ones, envied Apollon for this reason and because at the films and other gatherings he never had to think about people's heads in front of him, or tall hats, or even the modern tower that women call a hair style.

Apollon Stishnoi joined the Communist Party while at the front, where he was awarded two Medals of Valour, two Red Stars and one Medal of the Patriotic War. He said he had been a scout at the front, but nobody believed him: how could anybody so tall be sent on a reconnaissance mission? At first Apollon tried to prove he had really been a scout, and even showed the papers that verified it, but later on he gave up. After all, it was none of his business if they didn't believe him. They knew where they could go if they didn't like it. He himself knew it was true.

Telling lies went against his nature, in fact. It was one thing he could not do. For his honesty, his love of people, and his great patience in hearing them out, they chose him as Party Secretary of the collective farm. He had a load of work to do helping cope with postwar problems — the manpower shortage (not all those who would return had come home from the army, and many would never return), the shortage of machinery (the farmers were still using cows and the few horses that were left to plough the land) the farmers' cottages were falling apart, repairs and new houses were urgently needed. Then there was the problem of getting the pensions that were due to families that had fathers, sons, and brothers killed in the war. Another poser was the teacher shortage. And the never-ending problem of grain, more and more of it, that the country needed so badly. This was the most fundamental problem of all.

Apollon was so busy and so exhausted by his work that he had no time left for himself. So he remained a bachelor, and this title was soon changed to "old bachelor". There was one woman he loved and he had proposed to her, secretly, so that no one else would know of it. But she rejected him, saying she was still waiting for her Pyotr, document or no document. Well and good, Apollon was in no hurry, he would wait until she had reconciled herself to the fact that her husband was dead and then she would marry him. He did not want any other girl in the village — what marriage would there be without love? And so he lived on, alone with his elder sister: their father and mother had died during the war, had not lived to see their youngest back from the front.

Apollon's job as Secretary of the Party organization in Vyselki did not give him a salary, this being volunteer work.

"Good thing it's *not* a salaried job," said he. "Otherwise it's so easy when you sit there, away from the farmers, to lose touch with them and their needs. Problems! There are so many of them, you know. Grain and meat, and then meat and grain . . . Kaplya once said, 'bread is a substantive'. Well, I'd like to add that meat is, too!"

With this, Apollon rose from the log on which we had been sitting, and at that moment his towering, ill-proportioned figure loomed even taller than before.

"I'll go out to the field now," he said by way of farewell. "It's time for the windrowing. They must have started by now . . ."

Zhuravushka

Marfusha loved the night time. It seemed to her that everything that was good and happy in

her life always happened in the night. Her mother once told her that she had even been born at night, one fragrant night in May, when the trilling of a nightingale had poured into the room from the lilac bush outside. Her mother had died long since, but the bush was still there, and the nightingale still sang there in May.

When Marfusha was seven, her father decided to take her to the fair. He told her about it the night before they were to go, and Marfusha was beside herself with joy. But she was terribly afraid her father might change his mind, harness the horse and go off without her. She decided to stay awake all night to make sure.

It was already autumn, cool but sunny, without rain or blustery winds. Marfusha was lying right by the window, and to prevent herself from falling asleep, she listened intently to the sounds of the night, both indoors and outside the window. After everyone had gone to bed and she heard the measured breathing of her father and mother, the first new sound was a cricket chirring, and chirring so zestfully that Marfa suddenly felt very jolly and giggled. The cricket stopped, waited a while, then resumed his chirring, keeping it up till morning, when it stopped, probably frightened by the rooster, which hopped up on the bench in front of the house, spread his wings, shook himself so that he looked huge in the dim light of the dawn, and let forth at the top of his voice.

Soon after the cricket started, Marfusha heard a mouse. Like a shadow it crossed the moonlit path on the floor. But the fat old tomcat Fedka, who had settled snugly down in his place on Marfusha's stomach, only twitched his left ear, and a faint tremor ran through his body. But he did not move, for he was extremely lazy. For two years now her father had been talking about replacing him with a younger cat, but Marfusha knew he would never do it — Fedka had become too much a part of the family.

Outside on the roof, things were very lively. For a long time sparrows could not settle themselves quietly for the night in the thatch; they kept whispering and chirruping, talking about something in their own sparrow language. Suddenly the chirping stopped, for a moment there was silence. Some long-winged bird streaked past the window, a night hawk, probably. On his perch in the henhouse the rooster gave a scared, angry exclamation, and again the sparrows began chattering and hopping about. At last they talked themselves out and were silent. All she could hear then was a stubbly straw, which was hanging down from the roof, being ruffled by the breeze and scraping against the window pane.

At midnight her father went into the yard to put some feed out for the horse. It would be a longish journey to the fair. When

he came back he put the blanket straight over Marfusha's feet, but she feigned sleep, and could hardly manage not to burst out laughing — her heart was so overflowing with happiness.

At third cock-crow, everybody in the house woke up. Marfusha was not asleep, although she was pretending not to have woken up. She wanted her father to lean over and say:

"Come on, now, daughter, get up! You'll miss the fair!"

And he came up and said those very words and she felt like hopping for joy.

Then came the day Marfusha was to be admitted to the Young Pioneers. But they could not get a Pioneer scarf, and this circumstance cast something of a pall over this so momentous event. But in the night she woke up with an irresistible feeling that at the very moment she awoke, something wonderful and joyous had happened. She did not yet know quite what, but she was sure it had happened. Afraid of scaring it away, she went right back to sleep again. And in the morning she was awakened not by street noises, but by a bright, bright red glow over her eyelids. She opened her eyes and let out a squeal of joy: right in front of her, on the back of the chair, was the flaming red new scarf of the Pioneers. Her father was shaving in front of the mirror as if nothing had happened. Marfusha ran the length of her bed, jumped up, hung on his neck, and kissed his lathered cheek three times. The bit of red flame on the back of the chair, and her father's rough cheek and her mother at the stove with her gentle smile, and Fedka the cat sniffing the end of the unfamiliar red silk — all this was like a bright little star that she was to remember for the rest of her life.

In the evening there was a real bonfire in the Pioneer camp — a big campfire on the bank of the Balanda. The children were jumping over the bonfire, Marfusha too, and she singed her heel. Petka, one of the boys at the camp, licked his finger and rubbed Marfusha's heel for a long time, and kept repeating: "Now it'll be all right!" He said it with the air of a doctor who knew, but the hairs on the crown of his head stood up in a very funny way and one felt like giving them a tug for some reason. She remembered all this, and the River Balanda always had a special place in her heart.

Later on, there was the time they went up into the watchtower amidst the ripening wheat — Petka, Vaska and Marfusha. It was night and the sky was spangled with stars. She and Petka were counting the shooting stars when an insect flew into her face — and there were laughter and tears. And again Petka wetted his finger and rubbed and rubbed her face with it and kept saying that everything would be all right. And it was. Everything was as it had been that earlier time except for one thing — she wished Petka

would always be by her side, with his funny sticking-up hair, that there would always be this starry night sky, that there would always be just the two of them.

Then there were the cranes. They landed on the millet field, in broad daylight, and posted sentries, who stood stiffly on the spot; then, proud and handsome, the birds began strutting pompously about. Marfusha was the first to see them, and squealing with joy, she clapped her hands so loudly that the cranes all began scurrying and then in a body took off smoothly into the air. Enchanted, Marfusha untied her kerchief and waved and waved to the disappearing birds. Her lips kept repeating, as if of their own volition: "Oh, crane, dear crane, take me with you!" And then, she surprisingly burst into tears, ran down the steps and towards the village. She had wanted to fly away together with the cranes, and she ran and ran across the field, crying as she ran. She knew that Petka would run after her, and she wanted that, too. He ran, and he overtook her, and they returned, and Vaska went home to bed. They remained alone on the tower. Petka and Marfusha, alone in the whole wide world. It was incredible happiness, he and she were only fourteen, there were stars in the sky up above them, and their hearts beat wildly, joyously.

There were many more nights. And then the one years later that decided everything. He said:

"My Zhuravushka! My little crane!"

She had nobody else in the world, and she did not shut the door in his face... They walked into the dark house, and, without turning the light on, sat on the chest with their arms round each other. The cricket was chirring away, but they did not hear it. They heard nothing but the blood that was singing in their ears and their temples. Zhuravushka was the first to break away. She walked to the bed and, without saying a word, pulled back the blanket.

The next morning she felt a great weariness, such as she had never felt before.

"I'm so tired, Petia," she said. Her large dark tired eyes radiated a quiet happiness.

"Maybe you'll have some sleep now," he asked.

"How can you say that?" she said, reaching towards him again, her lips, soft with kisses and a little parched, seared by an inner flame.

Later she put his head on her arm, and whispered:

"Oh! Such a night!"

* * *

Zhuravushka was sitting outside her house, in the garden, on the same little bench that Pyotr had made right after the night they became man and wife. He had boarded up his own house and moved to hers. And now after all these years, there she sat, trying to remember other happy nights that had followed that very happiest of them all. For some reason her memory brought them to life again less and less. Maybe because her son Seryozhka was taking up her attention: three days ago he had come home on holiday from the city, where he worked as a radio mechanic. Seryozhka she loved beyond anything in the world. He was both her torment and her happiness. And now he was at the village club dancing, "fancy-dancy" Grandfather Kaplya called it. Films and dancing every day — that was all he cared for. Seryozhka was there now, and she thought she could even hear his voice, very much like his father's, soft and husky. Oh, Seryozhka, your mother won't fall asleep until you come. There was a television set inside, Seryozhka's gift. Should she turn it on and watch for a while? No, she would stay outside: the night was so beautiful, she could not tear herself away.

But where had all those happy nights of hers gone? Why couldn't she remember them now? Had they ever happened? Yes, they must have, since she was searching her memory for them now. They must have. They were all of them like that first one. Until Black Sunday, as the soldiers' widows named that terrible day, June 22, 1941.

Early that morning Pyotr, who was the leader of a collective farm field team, and his old friend Vassili decided to go out to take a look at the grain fields — a peasant habit from way back. Zhuravushka stayed at home to fry pancakes against their return, although she really wanted to go with them. Pyotr could see that in her eyes, which had suddenly become sad, in the set of her lips, in the crooked line of her eyebrows, and in the abrupt way she made for the stove and later, fumbled noisily with the shutter, studiously avoiding her husband's eyes. He went to kiss her good-bye, but she turned away.

"What's the matter?" he asked, obviously alarmed.

"Nothing. Hurry up, now. Vassili is waiting for you!"

She wanted to go with them, but it was not because her husband did not take her with him that she was angry. She was hurt because he could leave her so calmly after what she had told him the night before. She had said that they were going to have a son. He had started and jumped out of bed, picked her up, and with her in his arms, danced about the room like a madman, repeating,

"Zhuravushka! My sweet, my little bird, honey!"

Then he had put her on the bed and kissed her for a long time. Then, after getting his breath back he said:

"And why must it be a son? Suppose I want a daughter!"

"You lie. You want a son, and I'll bear you one. That's all there is to it!"

He gave a kind of muffled whoop, turned a double somersault and again lifted her up in his

arms and carried her about until he dropped onto the bed exhausted. But that had been the night before. And now he had left as if nothing had happened. When the door shut behind him she sat down on the bench opposite the stove and felt thoroughly wretched. The tears welled up and rolled down her cheeks. She did not even try to wipe them off: let him see them, and see her just like this when he got back.

Meanwhile he was with Vassili, driving along the edge of the wheatfield, trying to remember every detail so that he could tell Zhuravushka what he had seen. The morning was fresh and joyful, somehow. The sun was just rising and had not yet drunk up the dew, it had only flooded the sky with red-red ink and had not yet begun to warm the fields. From the ears of ripe rye hung emerald-green beads of dew. Pyotr jumped down from the cart and waded deep into the rye, swam through it as if it were a sea, his arms outstretched as if he wanted to embrace the whole field. The drops of dew, cold and heavy, fell on his face and into his shirt front. It was so pleasant he began to laugh. He clutched an armful of rye, pulled it out with a jerk, tied it into a sheaf and came back to the cart, still laughing, and shivering a little now from the cool breeze, like an early bather coming out of the cold river.

"Just look, Vaska, look at the grain!"

The horse felt that the men were busy, moved into the rye field and reached out for the heavy, dew-laden ears.

Pyotr and Vassili husked the spikes and counted the grains, and then put them into their mouths, munching away with exclamations of pleasure.

Next in line was the wheat. It was still dark green, and all there was inside its ears was a tiny drop of milk. But the wheat harvest, too, looked highly promising.

With joy in their hearts Pyotr and Vassili went off to the Big Hill, the Mar, as it was called in Vyselki. At the foot of the hill one could always find lots of wild flowers. Pyotr made a large bouquet and burying his face in it, breathed in the fragrance, murmuring,

"Zhuravushka!"

They were singing at the top of their lungs as the cart rolled downhill. When they came abreast of the house, Pyotr jumped off and shouted to Vassili to take the horse into the yard. He burst into the house and exclaimed:

"Zhuravushka, it's for you!"

When he saw her crying he stopped short. Was she still annoyed with him for going off without her? He didn't want that. He'd have to tell her he didn't. She pointed to the radio, too choked to speak. It was war.

On the third day of the war Zhuravushka began her life as a soldier's wife. And the strange thing was that neither when Pyotr was still alive and sending cheerful letters from the front, asking about his son Seryozhka, as yet unborn, nor afterwards, when her husband was dead, could she ever forgive him those two or three hours they could have spent together that Sunday, the last hours of their happiness. He went to the war and never knew how bitterly she had wept, how she had felt the most wretched creature on earth the whole of those two to three hours. And now he would never know. Nobody knew, because nobody had ever seen her weep: Zhuravushka did not like to share her grief with others, though she had grief enough for many.

Having seen off her husband and his comrades, she came back home and lay down on her bed, staring at the ceiling with glassy eyes. Then she spoke aloud, to the one who was to be born in six months' time:

"What do we do now, Seryozhka?"

From that time on, she often spoke to her son, because she knew in her heart that Seryozhka was all she had left in the world. And when in the third year of the war she got that terrible piece of paper, she was not even surprised: she had been expecting it. Perhaps that was why the blow did not crush her, that was why she managed to survive. And, though she knew that the paper did not lie, she refused to believe it because she could not imagine life without Pyotr. But she had to live, not for her own sake but for Seryozhka.

Akimushka Akimov, who was the collective farm chairman, the local blacksmith, the member of the village council and something else besides, all rolled into one, came to talk to her.

"Your Pyotr was a team leader. So you take his team."

She accepted the offer without hesitation. Without Pyotr the house was empty and strange. She was glad when she had to be away, spending whole days out in the field, in the village, or the collective farm office.

Seryozhka was born at the end of December. When Zhuravushka was told it was a boy she was surprised only because someone still thought she needed to be told. How could it have been otherwise? Pyotr and she were expecting a son and had even given him a name. He was their Seryozha.

Zhuravushka had a letter Pyotr had sent her when he got the news of his son's birth. She had read it hundreds of times: it had been handled and wetted with tears so often that now nobody could read it but herself.

"My dearest wife Zhuravushka!

"Do you know, darling, that there's no one happier than your Pyotr in the whole world? Now the devil himself couldn't scare me, to say nothing of that wretch Hitler. My darling, thank you! For Seryozhka, for yourself, your eyes, your hands, your heart, for everything! There's just one thing I want to ask you — the biggest thing of all — take good care of yourself and Seryozhka. We'll

take care of the Germans. They've been pushed back from Moscow and we'll push them all the way back to their damned Berlin. I've just come off duty, after a full night's stint. The sky was clear and starry. I chose the brightest star and called it Zhuravushka. And looking at the star, I talked to it for a long, long time, as though I were talking to you, my dearest. And in my dugout I opened your parcel and we had a real feast here. If the Germans knew, they would have burst with envy. The sergeant even allowed us to use our emergency rations in honour of Seryozhka's birthday. We were celebrating until morning. And then I remembered how hard it was for you back home, and I felt ashamed of myself and the feast: you're on short rations yourself, probably sending everything out here to us. And what about firewood? Ask Akimushka or grandfather Kuzma to bring some, they won't refuse. Don't go to the forest yourself, and don't go out much, it's very cold outside. In our company three boys got frostbite and were shipped off to hospital. They're very good boys, smashing soldiers. So you take care of yourself and tell Seryozhka to be a real man, tell him not to cry at night, not to get his nappies dirty, and not to bite his mum's nipples, or else I'll come back and give him a spanking. There's something else, too. I forgot a book, called "Astronomy" somewhere in the old house. You get it and keep it for me. I shall need it. And also sell the house and use the money to buy some grain and flour with. Rye flour and a little wheat flour if you find it, but only for yourself. Don't bake any more buns for me. We're fed very well here, we don't need anything from home. Thanks for the socks, that's exactly what I needed. My feet feel so warm and comfortable that not a single German can run away from me now. Well, that's about all. I embrace you, my dearest wife. And kiss Seryozhka's tummy for me. Goodbye, Your Pyotr. December 30, 1941."

Zhuravushka had read the letter so often to herself, and to Seryozhka, who did not understand a word, and to her friend Marina Lebedeva, that she learned it by heart. She read it without looking at the paper, chanting it like a prayer. Once the old woman Nastasya, who lived next door, looked at her in alarm and said:

"You'd better put away that letter, my girl. You can go mad if you carry on like this. It nearly happened to me. When my man sent me a letter from the front, that was during the first German war, I used to read it and read it, until my head was giddy. I even began talking to myself. When my mother-in-law heard me, she took a belt and thrashed me. And when she was done she said I was a fool, and what would the children do without me."

Pyotr wrote many more letters and she knew them all by heart. But she did not read any more to

Marina Lebedeva. Her friend had been informed shortly before that her Andrian had been killed near Stalingrad, at some village called Yelkhi. He left Marina with two children, a three-year old daughter and a son barely eighteen months. The news came when Marina was working in the field, where the women, almost all of Zhuravushka's team, were ploughing, with only cows to pull the plough. When Marina saw the notice she fell down right into the furrow she had ploughed. Akimushka Akimov picked her up and carried her a little distance away, and sat down talking to her in a low voice, trying to comfort her. Then he got up, took over the plough and went on, clumsy, stooping more than usual, as if some invisible load had been put on his back.

Zhuravushka ran up to her friend, squatted at her side, embraced her and said in a whisper:

"Don't cry, Marina dear, tears won't help. You won't bring him back with your tears. Think of the children . . ."

Marina suddenly checked her sobbing, looked up at Zhuravushka and with unexpected malice in her eyes cried out:

"It's easy for you. Yours is alive and well. Look at the letters he sends you!"

Zhuravushka recoiled as if from a blow, grew pale, but said nothing. Then she fled so that none of the other women who came running to Marina's side could see their team leader in tears. Later, when Zhuravushka herself received the notification that her own husband had been killed, Marina fell on her knees and begged Zhuravushka's forgiveness for her cruel words. After that they were always together to face the numerous blows that life had in store for them.

When Seryozhka was born, Zhuravushka could not stay on as team leader — she remembered Pyotr's instructions to take care of herself and their son.

It was easier said than done, of course. Just try to take it easy when there were only women, old folk and children left on the farm, and when all that was left of the draft cattle were untrained cows and old horses ("pensioners", grandfather Kaplya called them). All the horses that were in more or less good shape had been taken to the front.

Zhuravushka and Marina Lebedeva had started teaching their two cows together, so they could pull the plough in one harness. But on the first day they tried it, Seryozhka almost lost his mother. Marina's cow, Zorka, which was known for its vicious temper, showed its displeasure as soon as the yoke was put on its neck. With bloodshot eyes, bellowing and switching its tail, the cow first jumped up, then lowered its head and charged. Zhuravushka tried to talk to it, but before she could utter a word the cow had lifted her up on its horns. Marina

screamed in horror: "Help, oh, help!" She danced about, but could do nothing to help. Zorka tossed Zhuravushka up three times, and then flung her aside, broke the yoke, and ran downhill to the village. Zhuravushka lay on last year's stubble with no signs of life. But she was alive, although she could not believe it herself. What saved her was the fact that Zorka's horns turned in too far and the cow could not gore her. The women ran up, took Zhuravushka to the cart, laid her there and began wailing over her as if she were dead.

"Oh, stop your bawling," she moaned. "I'm alive... it's just something in my side..."

They pulled off her blouse — her side was bleeding and badly mauled.

"Thank God the breast is not hurt," said one of the women, "or she wouldn't be able to nurse Seryozhka."

It turned out later that two of the ribs in her right side were broken.

The women wrapped a towel tightly around her, put her into the cart and took her home. They got the old woman Nastasya to look after her, which she willingly agreed to do, for she loved Zhuravushka dearly.

Out there in the field everything happened so quickly that Zhuravushka did not even have time to get frigbtened. But sbe was scared now, and not for her own sake, but for her son, Seryozha's, and also because she had not followed her husband's advice. Suddenly picturing Seryozhka an orphan, she began to weep, not bothering to conceal her tears from outsiders. She began frenziedly showering kisses on her son, then pressed him tightly to her. "Oh, what a fool your mother is, what an idiot!" she cried. "I could have left you all alone, my darling, my son, my own flesh and blood. And what would your daddy say if he knew?"... She kissed him again and again, and then held him up in the air, paying no attention to the sharp pain it gave her. And she laughed and cried at the same time, while her dark eyes shone from under the darker arches of her brows. Nastasya was silently watching her, and the wrinkles in her face dissolved in a broad, gentle smile. She heaved a deep sigh and said:

"You're a beautiful girl, Marfusha!"

"Oh, go on, Aunt Nastya!" said Zhuravushka with a start. She blushed as she said this, which made her more beautiful still. She took a furtive glance at the mirror, felt ashamed of herself, blushed even more deeply, and suddenly sobbed violently, without knowing why, and hid her face in her pillow.

"Now, now, my little bird! No need for that," Nastasya's large, warm hands stroked the heaving shoulders of the young soldier's wife. "Stop it now! You'll scare the child. Come on now!" the old woman cried out. That had its effect: Zhuravushka's shoulders

shook less and less and finally calmed down. Zhuravushka turned over on her back and gave a watery smile.

"What's wrong with looking in the mirror?" the old woman demanded. "You're young, aren't you? There's nothing wrong with looking at a beautiful face. Now when you're as old as I am... For a long time now, I've only looked at the back of my head in the mirror, not my face, because when I see the back of my head I remember what I was like when I was young..."

Zhuravushka could see three fine, wispy curls lying on the old woman's neck — the only ones that remained from her girlhood years. "I'll be like that, too!" thought Zhuravushka and blushed again at her meanness.

Two weeks later Zhuravushka returned to work. By then the wayward Zorka had been tamed by the joint efforts of her mistress, Marina, by Akimushka Akimov, who had just handed over his duties as chairman to a newly returned disabled veteran, and Kuzma Udaltsov, who had taken over the work-team from Zhuravushka.

The summer passed in work and trouble, and late in December, the mail carrier, Vera Akimova, brought the dreaded paper, "... died the death of a hero at Kalinovka, near Kirovograd," it read.

"There it is. I knew it, I knew it!" Zhuravushka whispered, wild with grief. Then she shut helself up so that nobody could see her tears, or hear her sobbing. On the third day she went out to the village centre. That was where Marina Lebedeva fell on her knees before her, begging her forgiveness.

And so Zhuravushka became a widow.

She took better care of Seryozhka than she did of herself. But the other mothers did the same. When the baby was a year old, wise old Nastasya, the self-appointed guardian of Zhuravushka and her son, advised her:

"Don't wean him yet, keep him at your breast as long as you can. There's enough bread for one mouth, but will there be enough for two? You listen to me, old fool that I am. Listen to me this once, don't wean him now. That's what I did when Kuzma went to the front in the last war."

Zhuravushka obeyed her and did not wean the boy completely until he was three and a half years old. But even at two, he began more and more often to ask for bread. She tried telling him she would bake some the next day, knowing that she could not keep her promise — not that day or any day — for there was not a speck of flour in the house. Instead she baked flat cakes of potatoes and beetroot. Seryozhka ate them if they were hot, but as soon as they cooled off, he spat the stuff out and howled, looking up at his mother with angry little eyes. He wanted bread.

The hardest time of all was the

spring of 1945. All the grain had been used up before Twelfth Night and the farmers tried to make do with whatever potatoes they had left. This, with beetroot and pumpkin was their only diet. In this way they held out until the spring, and when all reserves had been exhausted, they waited anxiously for the snow to melt in the fields. After that they wandered about, bags in hand, picking up ears of grain from amidst the previous year's stubble. But there were so few, for Zhuravushka, whom the women in the village still regarded as their team leader, had pleaded with them during the harvesting not to leave a single ear. "Don't you lose any of that wheat. Our soldiers over there are hungry. Grain is a soldier, too!" she had said. And now she was regretting these words, and thought she felt the glances of the women on herself, especially those who had many children. She went first to one, then to another and offered them the corn she herself had found with so much effort. When she met their surprised and protesting looks, Zhuravushka hurriedly explained:

"Take it, take it, Aunt Fedosya. I still have a pail of rye grain at home. Take it."

One day when they were thus engaged in gleaning last year's ears of grain, somebody's boy came galloping in on a big-bellied foaling mare, yelling at the top of his lungs:

"Mum! It's Victory! Victory!"

The women straightened up as one, without even noticing the stiffness in their backs. For a minute they stood in a sort of trance. Then they all burst into tears and began hugging and kissing each other. Someone suggested that they gather all their ears together in one heap and bake one big loaf, and cut it up so that each would have an equal share.

Zhuravushka never remembered eating anything so delicious in her life.

After the first postwar harvest Zhuravushka weaned Seryozhka from her breast, where there was nothing but a bitter drop of milk left anyway.

Had anyone asked her when it was harder to live — during the war or after, she would have said after. For during the war all the women of the village shared one bitter lot: their husbands were all at the front and they, with their little children and old folk, were at home. They visited one another, late in the evening, or in the winter. Often they came to Zhuravushka's, those who had received the fateful news and also those who had not, but who might receive it at any time. All this had made them one, created a bond of kinship. Avdotya Markelova did not look at Zhuravushka with suspicious eyes, because her husband, Vassili Kuprianovich, was out there fighting with the rest of the men and could lay down his life, just like Pyotr, in some unknown village.

But after the war it was different. One after another the soldiers who had lived through the war began returning home. The lucky wives who at last had their loved ones back immediately built up a wall of jealousy around them, and heaven forbid if such a wife noticed her husband inadvertently glancing into a young widow's yard. This would be the end of a peaceful existence for both him and the widow, for the dear wife would gnaw and nag him to death, dubbing her newly returned and beloved husband a wandering tomcat, insulting the woman with whom she had only yesterday shared her last crust of bread along with her grief by calling her bitch, and finally making sure that the whole village was apprised of her opinion, so that all might look upon the innocent widow as a depraved and dangerous woman.

Zhuravushka got a bitter taste of this the day the first soldier's tunic, faded by sun and sweat, appeared in the streets of Vyselki.

When Vassili Kuprianovich Markelov returned home he had not even come near Zhuravushka's house when his wife Avdotya took her first "preventive measures". On the very first night after his return, having had her fill of caresses, she announced without any preamble that there was a woman in the village, perhaps he remembered her, Zhuravushka, her husband, now dead, had called her. Well, she was a dissolute and lecherous female who entertained every male who came to Vyselki on a visit, any official or anybody at all.

"Well, so what?" Vassili Kuprianovich grumbled in tired voice. "What do I care?"

"Don't pretend you don't know!" she whispered fiercely. "Maybe you think I didn't see you making eyes at her when she was passing our house the other day?"

"You'd better give over, Avdotya, or you'll get a walloping!" he said. Avdotya fell silent.

It was true enough that officials and other visitors often stayed at Zhuravushka's place. They were directed there by Akimushka Akimov, who knew that the widow's house was a spacious one and Zhuravushka herself was hospitable, that she would give them supper and even heat the bathhouse for them. But some of these men must have had the same opinion of Zhuravushka as Avdotya did. As soon as they saw that the boy was asleep, they went reconnoitering in the neighbourhood of her bed. However, nobody knew what all this ended in for the more adventurous of them. Zhuravushka herself would say nothing, and it would not be to his advantage to relate any of his nocturnal misadventures; he considered himself lucky the proud little woman had not left any visible marks of his disgrace on his face.

Meanwhile time went on. Seryozha was growing, and Zhuravushka was getting older, although she did not notice it. The others did not notice it either — for

them she was the same Zhuravushka, the most beautiful girl in the village. Seryozhka went to school and got up early in the morning when it was still quite dark, when she had barely had enough time to milk the cow and heat the stove. The nights were long and there were lots of things to think about during those long nights . . .

She had two proposals from Apollon Stishnoi, and one from Vassili, Pyotr's friend, who had returned from the front. She turned down Vassili, who she thought was sorry for her, and whom she did not love. With Apollon it was another matter. He somehow reminded her of her husband — a quiet, reasonable and very tender man. She did not marry though, because she was still waiting for Pyotr. She did not believe he was alive, and yet she waited. The village gossips added fuel to the fire, Marina Lebedeva among them. Once she spoke of how two missing men had showed up in the next village. Everybody had thought they were dead, their wives had received official notification and had re-married. A nice situation!

"Maybe some day ours will turn up?" said Marina.

Years passed, Seryozhka went to technical school in town and visited his mother only in summer, and even then he would spend days and days in the field.

In the autumn Vanyushka Solovei invited her to his wedding. At first she declined, but he implored her:

"Auntie Marfusha, please! Nobody's coming, and I have no relatives alive. The only people there will be uncle Akim, our Party organiser Poloni, and two girls from the village. And that's all. Auntie Marfusha — please!"

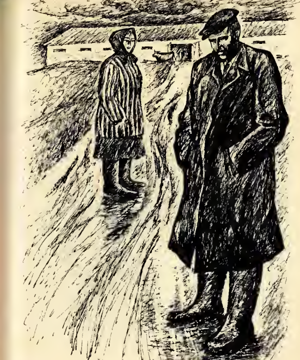
"All right, all right, Vanyusha. Just give me the time to change!"

Whether by accident or by design, but at the wedding table Zhuravushka was seated next to Apollon Stishnoi. The toastmaster was Akimushka Akimov who would now and then turn for inspiration to old man Kaplya who had come to the wedding party with his Nastasya. Also here was Sergei Volgushov, and his son and his daughter-in-law, the two of them known by the one name of Panya-Ganya, and many more people.

It was long past midnight when Zhuravushka rose to leave. To Apollon she said in a low voice:

"Walk me home, Poloni, I'm drunk . . ."

It was true, she was drunk, but not so drunk that she could not get home alone. But she did ask him and knew that what she had been avoiding for so long would happen that night, that the wedding party, the songs that were sung and the ditties with ambiguous refrains, the shining eyes of Vanya's bride, and Apollon's hot shoulder which she had felt against hers all evening had all conspired to soften her up and topple her resistance.



As if sensing what had happened, Marina Lebedeva ran into the house at the crack of dawn (she had just had time to see Apollon out) and, unaware of the cruel effect the story might have, proceeded to tell her about a man who had turned up in Kologrievka who was supposed to have served in the same unit as

Pyotr and had something important to tell his wife. Zhuravushka cried out, jumped out of bed and began to dress hurriedly.

"Let's run to Kologrievka!"

They ran three miles, swam across the icy river and were shivering with cold when they at last got to the village and found the man they were looking for. He said he had been taken prisoner, had spent some time in American DP camps, had been promised paradise on earth in the United States. So he went, and had soon had a bellyful of all that. It was with great difficulty that he had managed to get out of there and come home. Thank goodness he had kept his health, though he had precious little else left. As for Pyotr, he had never even heard of him. Somebody had just made it up.

All the way back it was Marina who was crying and Zhuravushka who was comforting her.

From that day on, she did not let Apollon come near her. And when she felt that she was pregnant she decided to get rid of it, secretly, so that neither Apollon nor anyone else in the village would know about it.

When Zhuravushka left the hospital, Apollon again proposed to her and said he wanted to take her to the local village council for a civil ceremony.

We can take Vanyushka Solovei with us as a witness," he said gaily.

But Zhuravushka frowned and said:

"We don't need any witnesses, Polosha. I won't marry you. I'd only feel ashamed before Seryozha. No, I won't do it."

And so there lives in Vyselki a young widow called Zhuravushka. For nearly five years now she has been working as dairy maid on the local collective farm. She has lots of work in summer, and still more in winter. She goes out to the cow shed several times every night, turns on tbe light and walks down the long passage to where the cows she is in charge of stand. They have already begun to calve. In her hands Zhuravushka holds a loaf of dark brown rye bread, heavily salted, for the calf. But then she changes her mind and gives the bread not to the calf, which can barely stand on its thin, wet legs, but to its mother, Pestravka. The cow gratefully takes the bread with her hard lips and chews it tiredly, her sides heaving and steaming from her recent labour.

"Eat, my pretty one!" says Zhuravushka and pinches off another lump of the wonderful sweet-smelling bread for the cow and one for herself.

And at this moment she is content, in safe harbour, where all the hurts and wounds subside. She knows a kind of joy again as she repeats:

"Eat, sweetie. Eeat, my Pestravushka . . ."

Tbilisi, capital of the Georgian Republic. ▶